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*North Carolina Department of Transportation  
Statewide Planning Branch  
Small Urban Planning Unit*

*Thoroughfare Plan*

*for*

*TOWN OF WILKESBORO*



*TORY OAK*

*and*



*August, 1993*



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THOROUGHFARE PLAN  
FOR  
THE TOWN OF WILKESBORO  
AND  
THE TOWN OF NORTH WILKESBORO

Prepared by the:

Statewide Planning Branch  
Division of Highways  
N.C. Department of Transportation

In Cooperation with:

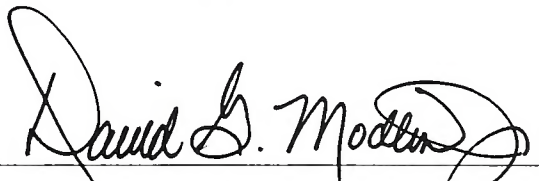
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3/29/94





## ACKNOWLEDGEMENTS

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200 copies of this document were printed at a cost of \$1184.62, or \$5.92 per copy. (G.S. 143-170.1)



## EXECUTIVE SUMMARY

This report presents a comprehensive transportation study of the Wilkesboro-North Wilkesboro planning area. It includes an evaluation of the existing road network; design year (2020) traffic projections; identification of system deficiencies; and recommended improvements that comprise the Thoroughfare Plan.

Figure 8 (page 39) shows the adopted 1993 Wilkesboro-North Wilkesboro Thoroughfare Plan. The recommendations are listed below:

1. NC 268 Bypass - Construct a four-lane divided facility from NC 268 to US 421. {TIP R-616}
2. Western Connector - Construct a two-lane facility from the west terminus of the proposed NC 268 Bypass to NC 268 west of the old airport.
3. Main Street (Wilkesboro) - Construct a two-lane facility from Main Street at North Spruce Street to SR 2510 approximately 0.3 mile east of Wilkesboro Blvd.
4. Eastern Loop - Construct a two-lane facility from NC 115 at SR 2510 to SR 1371.
5. White Pine Street - Extend White Pine Street (two-lane) to SR 1371.
6. 'D' Street - Extend to NC 18-268. Widen to a five-lane curb and gutter section. {TIP U-2718}
7. Cherry Street (North Wilkesboro) - Improve the alignment and extend to Main Street.
8. 'A' Street - Extend to 5th Street.
9. NC 18 - Widen to a five-lane section from NC 268A to SR 1002. {TIP R-2517}
10. NC 268 - Widen to a four-lane section from east of NC 18 to SR 1966. {TIP R-2603}
11. NC 115 (US 421 Business) - Widen pavement to 24-feet from SR 2318 to SR 2335.
12. US 421 Business - Add a 4th lane from Curtis Bridge Road to West Park Shopping Center.
13. SR 1001 - Widen pavement to 24-feet from Main Street to US 421 Bypass.
14. SR 2366 (Wilkesboro Ave) - Provide a center turn lane from NC 18/268 to Cherry Street.



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## I. INTRODUCTION

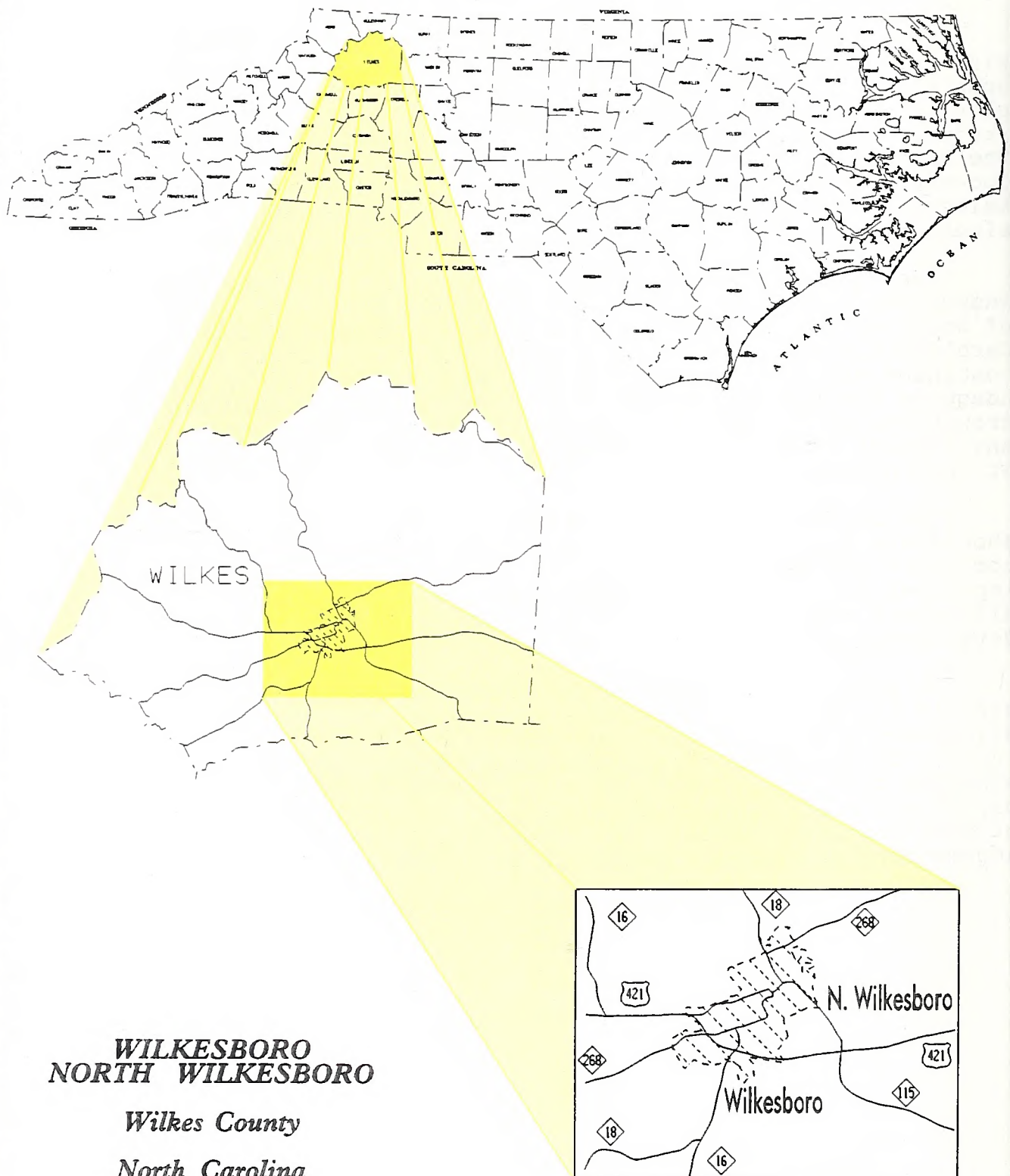
The original Wilkesboro-North Wilkesboro Thoroughfare Plan was adopted in 1975 and revised in 1983. A new study to update the Plan was initiated in 1989. This thoroughfare plan study includes an FHWA Corridor Preservation Pilot Project that incorporates a Phase I Environmental Analysis. The Environmental Analysis, contained in Chapter VI, documents an environmental screening of alternatives and the selection of preferred alternatives. The preferred alternatives are the adopted thoroughfare plan alignments.

The Wilkesboro-North Wilkesboro area is the trade and industrial center for Wilkes County in the Northwest corner of North Carolina. The area is a junction of four North Carolina highways and one US highway which contribute to its continued growth. This growth must be accommodated by an adequate transportation system that will maximize economic growth and at the same time preserve the aesthetics and environment of the area. Satisfying these demands is the goal of the thoroughfare plan.

The local governments of Wilkesboro and North Wilkesboro should use the Thoroughfare Plan as a tool to preserve corridors for future projects and to obtain funding to implement those projects. Corridors can only be preserved if Wilkesboro and North Wilkesboro coordinate future land development with the plan.

It should be emphasized that the proposed thoroughfare plan is based on the anticipated growth of Wilkesboro-North Wilkesboro and the surrounding area as described in this report. It is possible that the actual growth patterns differ somewhat from those logically anticipated. As a result, it may be necessary to accelerate or retard the implementation of some portions of the plan and/or make revisions which will accommodate unexpected changes in urban development.

## Geographic Location



**WILKESBORO  
NORTH WILKESBORO**

*Wilkes County  
North Carolina*

*Figure 1*



## II. THOROUGHFARE PLANNING PRINCIPLES

Typically, the urban street system occupies 25 to 30 percent of the total developed land in an urban area. Since the system is permanent and expensive to build and maintain, care and foresight are needed in its development. Thoroughfare planning is the process public officials use to assure the development of the most appropriate street system to meet the existing and future travel desires within the urban area.

The primary aim of a thoroughfare plan is to guide the development of the urban street system in a manner consistent with changing traffic demands. Through proper planning for street development, costly errors and needless expense can be averted. A thoroughfare plan will enable street improvements to be made as traffic demands increase, and help eliminate unnecessary improvements. By developing the urban street system to keep pace with increasing traffic demands, a maximum utilization of the system can be attained that will require a minimum amount of land for street purposes. In addition to providing for traffic needs, the thoroughfare plan should embody those details of good urban planning necessary to present a pleasing and efficient urban community. The location of present and future population, commercial enterprises, and industry affects major street and highway locations. Conversely, the location of major streets and highways within the urban area will influence the urban development pattern.

Other objectives of a thoroughfare plan include:

- (1) To provide for the orderly development of an adequate major street system as land development occurs;
- (2) To reduce travel and transportation costs;
- (3) To reduce the cost of major street improvements to the public through the coordination of a street system with private action;
- (4) To enable private interests to plan their actions, improvements, and development with full knowledge of public intent;
- (5) To minimize disruption and displacement of people and businesses through long range advance planning for major street improvements;
- (6) To reduce environmental impacts such as air pollution, resulting from transportation;
- (7) To increase travel safety.

Thoroughfare planning objectives are achieved through both: (1) improving the operational efficiency of thoroughfares; and (2) improving the system efficiency through system coordination and layout.

### **Operational Efficiency**

A street's operational efficiency is improved by increasing the capability of the street to carry vehicular traffic and people. In terms of vehicular traffic, a street's capacity is defined as the maximum number of vehicles which can pass a given point on a roadway during a given time period under prevailing roadway and traffic conditions. Capacity is affected by the physical features of the roadway, nature of traffic, and weather.

Physical ways to improve vehicular capacity include **street widening, intersection improvements, improving vertical and horizontal alignment, and eliminating roadside obstacles**. For example, widening of a street from two to four travel lanes more than doubles the capacity of the street by providing additional maneuverability for traffic. Impedances to traffic flow caused by slow moving or turning vehicles and adverse effects of horizontal and vertical alignments are thus reduced.

Operational ways to improve street capacity include:

- (1) **Control of access** - A roadway with complete access control can often carry three times the traffic handled by a non-controlled access street with identical lane width and number.
- (2) **Parking removal** - Increases capacity by providing additional street width for traffic flow and reducing friction to flow caused by parking and unparking vehicles.
- (3) **One-way operation** - The capacity of a street can sometimes be increased 20-50%, depending upon turning movements and overall street width, by initiating one-way traffic operations. One-way streets can also improve traffic flow by decreasing potential traffic conflicts and simplifying traffic signal coordination.
- (4) **Reversible lanes** - Reversible traffic lanes may be used to increase street capacity in situations where heavy directional flows occur during peak periods.
- (5) **Signal phasing and coordination** - Uncoordinated signals and poor signal phasing restrict traffic flow by creating excessive stop-and-go operation.



Altering travel demand is a third way to improve the efficiency of existing streets. Travel demand can be reduced or altered in the following ways:

- (1) Encourage people to form carpools and vanpools for journeys to work and other trip purposes. This reduces the number of vehicles on the roadway and raises the people carrying capability of the street system.
- (2) Encourage the use of alternate modes of travel such as transit and bicycles.
- (3) Encourage industries, business, and institutions to stagger work hours or establish variable work hours for employees. This will reduce travel demand in peak periods and spread peak travel over a longer time period.
- (4) Plan and encourage land use development or redevelopment in a more travel efficient manner.

### **System Efficiency**

Another means of altering travel demand is the development of a more efficient system of streets that will better serve travel desires. A more efficient system can reduce travel distances, time, and cost. Improvements in system efficiency can be achieved through the concept of functional classification of streets and development of a coordinated major street system.

### **Functional Classification**

Streets perform two primary functions--traffic service and land access, which when combined, are basically incompatible. The conflict is not serious if both traffic and land service demands are low. However, when traffic volumes are high, conflicts created by uncontrolled and intensely used abutting property lead to intolerable traffic flow friction and congestion.

The underlying concept of the thoroughfare plan is that it provides a functional system of streets which permits travel from origins to destinations with directness, ease and safety. Different streets in this system are designed and called on to perform specific functions, thus minimizing the traffic and land service conflict. Streets are categorized as to whether they function as local access streets, minor thoroughfares or major thoroughfares (see **Figure 2**).

Local Access Streets provide access to abutting property. They are not intended to carry heavy volumes of traffic and should be located such that only traffic with origins and destinations on the streets would be served. Local streets may be further

classified as either residential, commercial and/or industrial depending upon the type of land use which they serve.

Minor Thoroughfares are more important streets in the city system. They collect traffic from local access streets and carry it to the major thoroughfare system. They may in some instances supplement the major thoroughfare system by facilitating minor through traffic movements. A third function which may be performed is that of providing access to abutting property. They should be designed to serve limited areas so that their development as major thoroughfares will be prevented.

Major Thoroughfares are the primary traffic arteries of the city. Their function is to move intra-city and inter-city traffic. The streets which comprise the major thoroughfare system may also serve abutting property; however, THEIR MAJOR FUNCTION IS TO CARRY TRAFFIC. They should not be bordered by uncontrolled strip development because such development significantly lowers the capacity of the thoroughfare to carry traffic and each driveway is a danger and an impediment to traffic flow. Major thoroughfares may range from a two-lane street carrying minor traffic volumes to major expressways with four or more traffic lanes. Parking normally should not be permitted on major thoroughfares.

### **Idealized Major Thoroughfare System**

A coordinated system of major thoroughfares forms the basic framework of the urban street system. A major thoroughfare system which is most adaptable to desired lines of travel within an urban area and which permits movement between various areas of the city with maximum directness is the radial-loop system. This system consists of several functional elements-radial streets, crosstown streets, loop system streets, and bypasses (Figure 2).

Radial Streets provide for traffic movement between points located in the outskirts of the city and the central area. This is a major traffic movement in most cities, and the economic strength of the central business district depends upon the adequacy of this type of thoroughfare.

If all radial streets crossed in the central area, an intolerable congestion problem would result. To avoid this problem, it is very important to have a system of crosstown streets which form a loop around the central business district. This system allows traffic moving from origins on one side of the central area to destinations on the other to follow the area's border and allows central area traffic to circle and then enter the area near a given destination. The effect of a good crosstown system is to free the central area of crosstown traffic, thus permitting the central area to function more adequately in its role as a pedestrian shopping area.

# IDEALIZED THOROUGHFARE PLAN

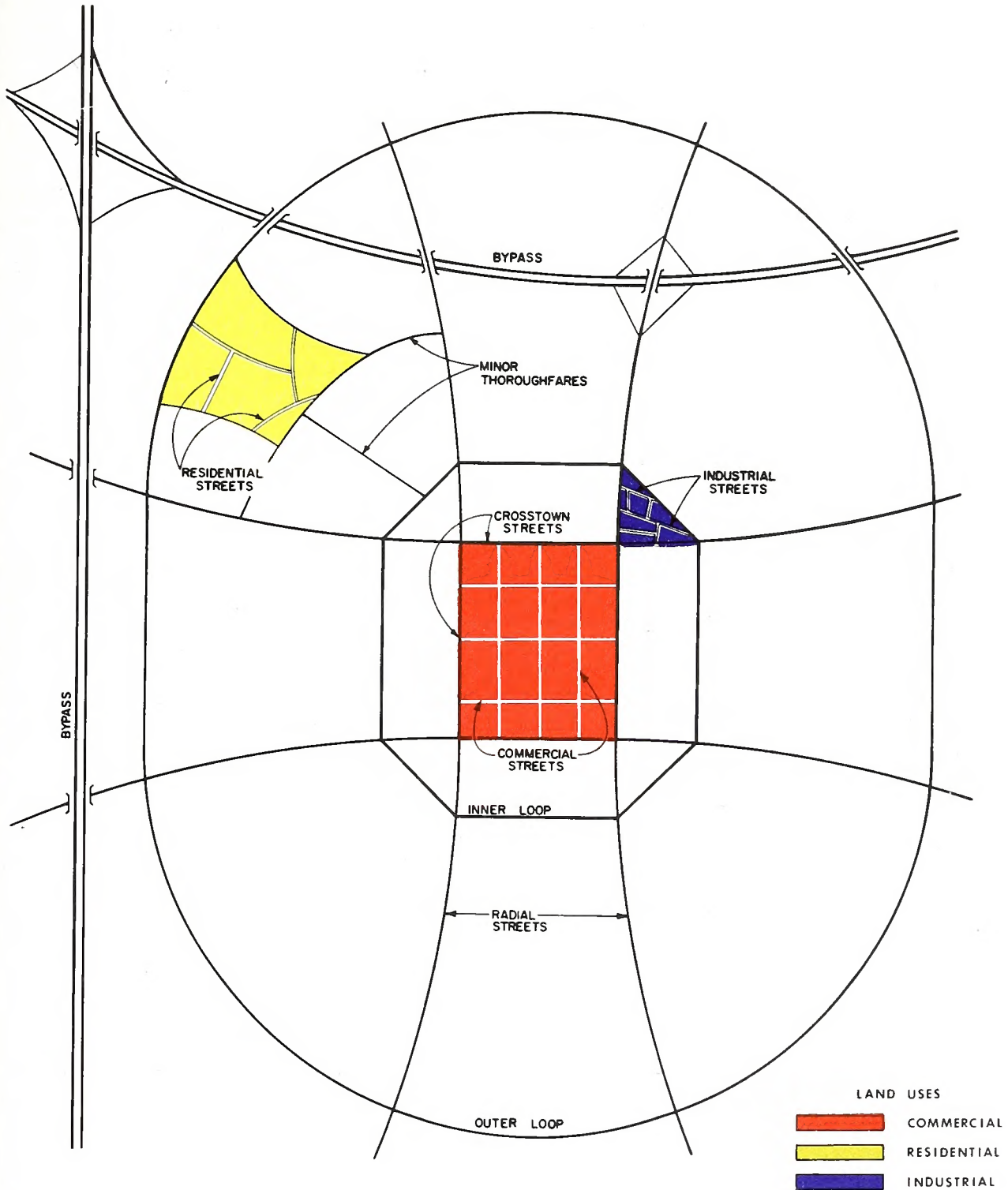


FIGURE 2





Loop system streets move traffic between suburban areas of the city. Although a loop may completely encircle the city, a typical trip may be from an origin near a radial thoroughfare to a destination near another radial thoroughfare. Loop streets do not necessarily carry heavy volumes of traffic, but they function to relieve central areas. There may be one or more loops, depending on the size of the urban area, and they are generally spaced one-half mile to one mile apart, depending on the intensity of the land use.

A bypass is designed to carry traffic through or around the urban area, thus providing relief to the city street system by removing from it traffic which has no desire to be in the city. Bypasses are usually designed to through highway standards, with control of access. Occasionally, a bypass with low traffic volume can be designed to function as a portion of an urban loop. The general effect of bypasses is to expedite the movement of through traffic and to improve traffic conditions within the city. By freeing the local streets for use by shopping and home-to-work traffic, bypasses tend to increase the economic vitality of the local area.

### **Application of Thoroughfare Planning Principles**

The concepts presented in the discussion of operational efficiency, system efficiency, functional classification, and idealized major thoroughfare system are the conceptual tools available to the transportation planner in developing a thoroughfare plan. In actual practice, thoroughfare planning is done for established urban areas and is constrained by existing land use and street patterns, existing public attitudes and goals, and current expectations of future land use. Compromises must be made because of these and the many other factors that affect major street locations.

Throughout the thoroughfare planning process it is necessary from a practical viewpoint that certain basic principles be followed as closely as possible. These principles are as follows:

- (1) The plan should be derived from a thorough knowledge of today's travel - its component parts, as well as the factors that contribute to it, limit it, and modify it.
- (2) Traffic demands must be sufficient to warrant the designation and development of each major street. The thoroughfare plan should be designed to accommodate a large portion of all major traffic movements on a relatively few streets.
- (3) The plan should conform to and provide for the land development plan of the area.

- (4) Certain considerations must be given to urban development beyond the current planning period. Particularly in outlying or sparsely developed areas which have development potential, it is necessary to designate thoroughfares on a long-range planning basis to protect rights-of-way for future thoroughfare development.
- (5) While being consistent with the above principles and realistic in terms of travel trends, the plan must be economically feasible.



### **III. EXISTING AND PROJECTED CONDITIONS IN THE PLANNING AREA**

The planning area is located roughly in the center of Wilkes County. It includes Wilkesboro (the County Seat), North Wilkesboro, and the surrounding area that is projected to be urbanized by the year 2020. It includes parts of three townships: Wilkesboro; North Wilkesboro; and Reddies River.

The existing road network within the planning boundary makes Wilkesboro-North Wilkesboro a prime area for growth. US 421 is a principal arterial that has a business and a bypass route traveling east-west through the planning area. This highway provides direct routes to both Winston-Salem and Boone. Four North Carolina Highways: NC 268; NC 18; NC 16; and NC 115 all function as radial routes and carry traffic through the center of the planning area.

#### **Factors Affecting Transportation**

The objective of thoroughfare planning is to develop a transportation system which will enable people and goods to travel safely and economically. To determine the needs of an area its population, land use, and traffic must be examined. To make these determinations, it is important to understand and describe the type and volume of travel which takes place in that area, and also to clearly identify the goals and objectives to be met by the transportation plan.

In order to fulfill the objectives of an adequate twenty year thoroughfare plan, reliable forecasts of future travel patterns must be achieved. Such forecasts are possible only when the following major items are carefully analyzed: (1) historic and potential population changes; (2) significant trends in the economy; and (3) character and intensity of land development. Additional items that vary in influence include the effects of legal controls such as zoning ordinances and subdivision regulations, availability of public utilities and transportation facilities, and topographic and other physical features of the urban area.

#### **Population Trends**

Travel is directly related to population. The volume of traffic on any road is a direct result of the size and distribution of the area's population. The planning area has experienced a slow but steady growth in the past few years. The population figures and design year projections are displayed in **Table 1**.

**TABLE 1**  
**POPULATION TRENDS**

|                           | POPULATION |        |        |        |
|---------------------------|------------|--------|--------|--------|
|                           | 1980       | 1990   | 2010   | 2020   |
| WILKES COUNTY             | 58,657     | 59,393 | 65,516 | 68,810 |
| NORTH WILKESBORO TOWNSHIP | —          | 6,954  | —      | —      |
| REDDIES RIVER TOWNSHIP    | —          | 9,126  | —      | —      |
| WILKESBORO TOWNSHIP       | —          | 9,211  | —      | —      |
| PLANNING AREA             | 11,438     | 11,582 | 12,776 | 15,198 |

\* Sources NC State Department of Budget and Management  
& Region D Council of Governments projections

### **Economy and Employment**

The planning area is a center of trade and industry for the western region of the state. It includes large employers in the following industries: poultry processing, home-building materials, furniture, mirrors, dairy products, and textiles. These industries attract and produce significant truck volumes. The existing industry and employment type is not projected to undergo significant change during the design period. It is important that the demands of these industries are satisfied by the road network to prevent the local economy from stagnating.

### **Land Use**

The generation of traffic on a particular street is closely related to the adjacent land use. Attraction between different land uses varies with their intensity and with the distance between them. Therefore it is necessary, as part of the transportation planning process, to designate land use by type. An analysis of the distribution of existing land uses serves as a basis for forecasting future land use needs and the resulting travel patterns.

For thoroughfare planning purposes, the land uses were grouped into four broad categories: **(1) Residential** - all land devoted to the housing of people, with the exception of hotels and motels; **(2) Commercial** - all land devoted to retail trade, including consumer and business services and offices; **(3) Industrial** - all land devoted to manufacturing, storage, warehousing, and transportation of products; and **(4) Public** - all land devoted to social, religious, educational, cultural, and political activities.

Residential development is predominant in North Wilkesboro north of 'D' Street and in Wilkesboro north of Main Street. Residential development also occupies the majority of the planning area that surrounds the downtown areas. Commercial development is concentrated in strips along US 421 west of Wilkesboro and NC 18 north of town. Commercial development can also be found in the CBD areas of both towns. Industrial development is found along NC 268 east of North Wilkesboro where several small warehouses are located. The poultry processing industry occupies the west side of Wilkesboro and other industrial warehouses are located on NC 268 west of Wilkesboro. There are several public parks, schools, and churches located in various parts of the planning area. **Figure 3** shows the projected growth areas for the four land use categories. As previously mentioned, these growth areas result in the projected traffic volumes on the road network. **Figure 4** shows the base year (1990) and design year (2020) traffic on the existing street network.

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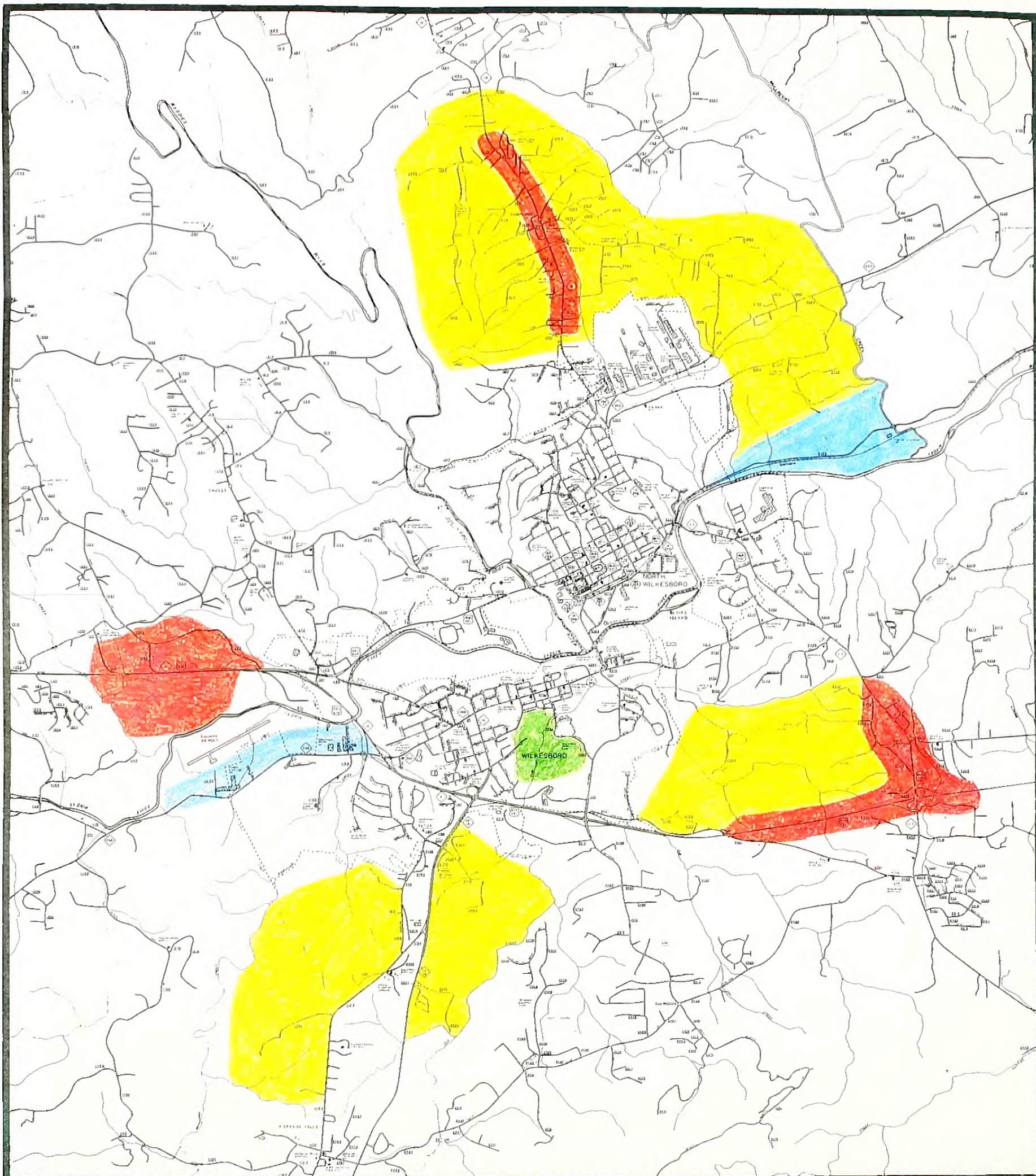


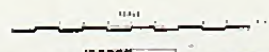
FIGURE 3  
FUTURE GROWTH AREAS  
LEGEND

RESIDENTIAL  
COMMERCIAL  
INDUSTRIAL  
PUBLIC



**NORTH WILKESBORO**  
**WILKESBORO**  
AND VICINITY  
WILKES COUNTY  
NORTH CAROLINA

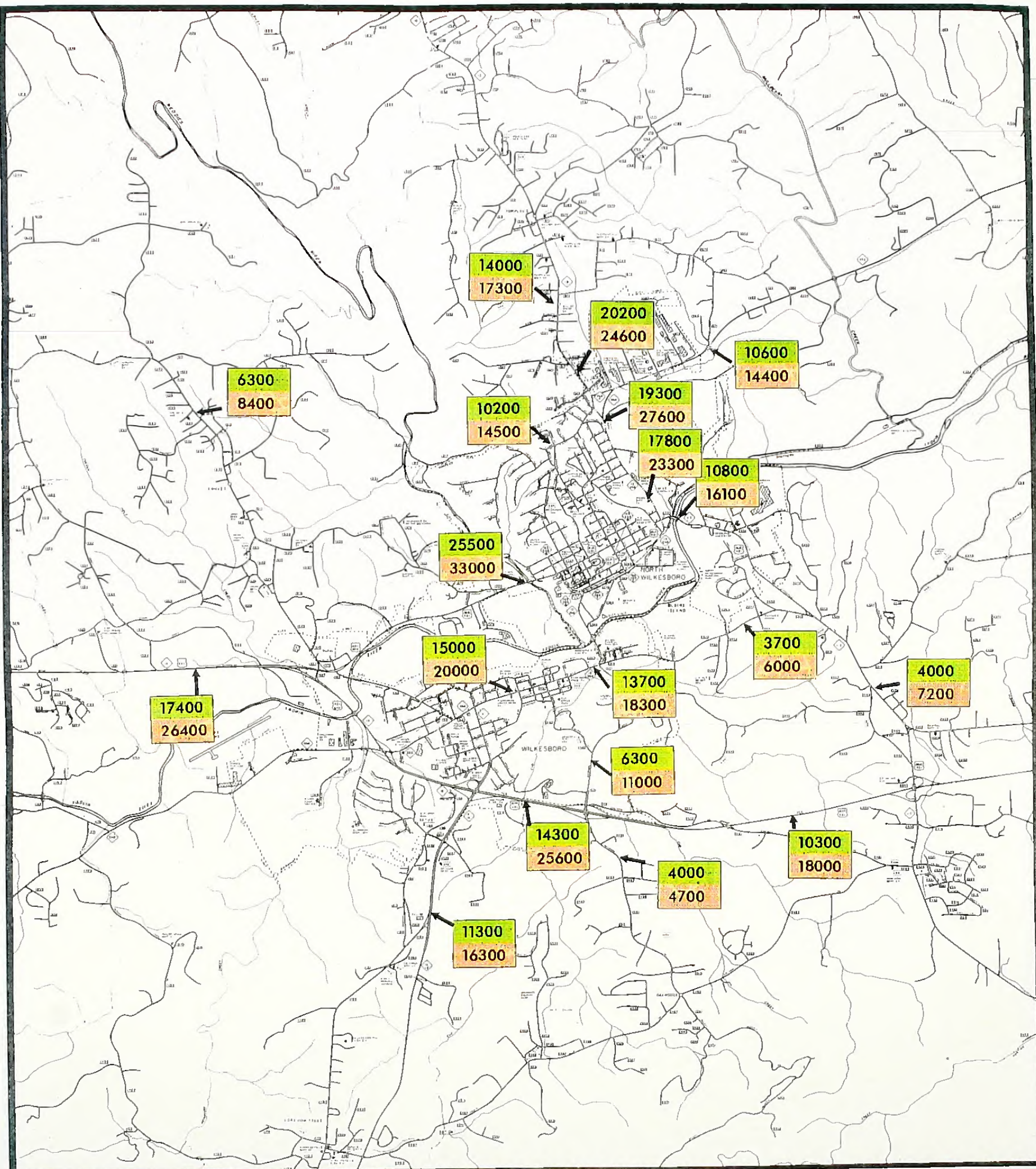
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IN COOPERATION WITH THE  
U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION











# EXISTING NETWORK WITH CURRENT AND PROJECTED TRAFFIC

## LEGEND

CURRENT ADT

PROJECTED 2020 ADT



**NORTH WILKESBORO  
WILKESBORO  
AND VICINITY**  
WILKES COUNTY  
NORTH CAROLINA

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In cooperation with the  
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FIGURE 4





#### IV. SYSTEM DEFICIENCIES

Deficiencies in a road system are evidenced by poor levels of service, high accident locations, and, in general, a difficulty in traveling from an origin to a particular destination. These deficiencies include highway sections with one or more of the following conditions: the traffic volumes exceed capacity; the lane widths are too narrow; the bridges are obsolete and/or deficient; and the accident frequency is excessive.

There are several problem locations in the Wilkesboro-North Wilkesboro planning area that, without improvement, will only be magnified in the design period. Obvious problems include traffic congestion along the following routes: NC 18 north of the Yadkin River; US 421 west of Wilkesboro; NC 268 east of North Wilkesboro; Main Street in Wilkesboro; Wilkesboro Blvd.; and the CBD area of North Wilkesboro. Also, the planning area lacks efficient and direct means of travel between its northeast and southwest portions. This is an important deficiency because the northeast-southwest movement is a significant travel pattern in the planning area.

The loop facilities and downtown improvements recommended in the thoroughfare plan are designed to alleviate the congestion and increase the system-wide level of service. The improvements will also increase options for travel between the northeast and southwest quadrants of the planning area which will make travel more comfortable and efficient.

#### Capacity Analysis

Capacity is defined as the maximum number of vehicles, under prevailing roadway and traffic conditions, that have a reasonable expectation of passing over a given roadway section in one or both directions during a given time period. A comparison of capacity with actual traffic volumes is a good indicator of the adequacy of the existing major street network.

In an urban area, a street's ability to move traffic is generally controlled by the spacing of major intersections, the pavement width, and the type and number of traffic control devices. These characteristics can be manipulated to increase the capacity and improve the level of service.

The level of service is a function of the ease of movement experienced by motorists using the facility. Six levels of service, shown in **Figure 5**, have been selected to identify the conditions existing under various speed and volume conditions on any highway or street.

The six levels of service are:

1. **Level of service A** - A condition of free flow with low traffic volumes and high speeds. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.
2. **Level of service B** - A zone of stable flow, where the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A, because the presence of others in the traffic stream begins to affect individual behavior.
3. **Level of service C** - Also in the range of stable flow, but the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.
4. **Level of service D** - Approaches unstable flow, where speed and freedom to maneuver are severely restricted. The driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.
5. **Level of service E** - Represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor. Driver and pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.
6. **Level of service F** - Forced flow operations at low speeds, where volumes are below capacity. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required

to stop in a cyclic fashion. Level-of-service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. In many cases, operating conditions of vehicles or pedestrians discharged from the queue may be quite good. It is the point at which arrival flow exceeds discharge flow which causes the queue to form. Level-of-service F is an appropriate designation for such points.

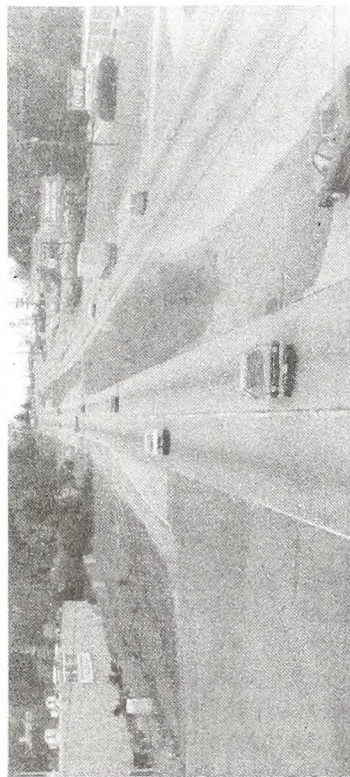
An analysis of roads in the Wilkesboro-North Wilkesboro Planning area was made to determine if the projected traffic (year 2020) would exceed the practical capacity of the system. The design capacities used to analyze the road segments correspond to a level-of-service D.

Based on this analysis, the following sections of road are expected to exceed their capacity within the design period:

1. US 421 Bypass
2. US 421 Business
3. NC 18 north of the Yadkin River
4. NC 268 east of North Wilkesboro
5. Main Street in Wilkesboro
6. Wilkesboro Blvd.
7. SR 1372
8. Curtis Bridge Road

**Figure 1** in the Phase I Environmental Analysis (Chapter VI) shows segments of the existing network that will carry over-capacity volumes by the design year.





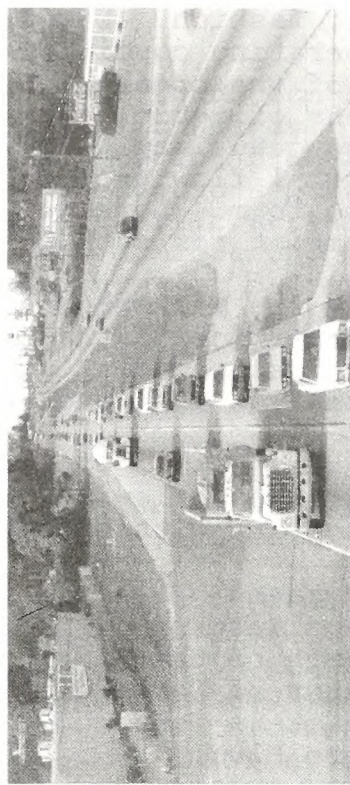
LEVEL OF SERVICE - A



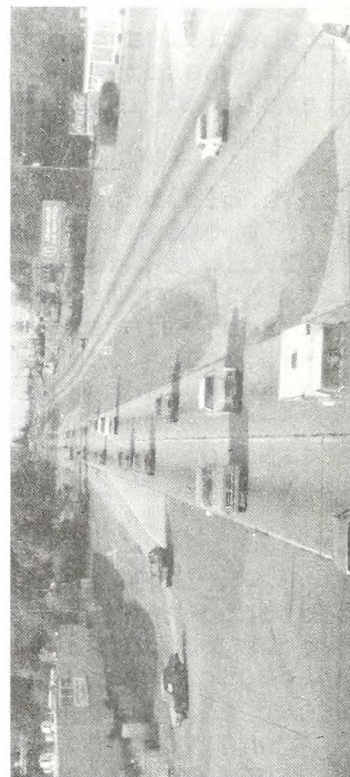
LEVEL OF SERVICE - D



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LEVEL OF SERVICE - E



LEVEL OF SERVICE - C



LEVEL OF SERVICE - F



## Bridge Conditions

Bridges are a vital and unique element of a highway system. First, they represent the highest unit investment of all elements of the system. Second, any inadequacy or deficiency in a bridge reduces the value of the total transportation system. Third, a bridge presents the greatest opportunity of all potential highway failures for disruption of community welfare. Finally, and most importantly, a bridge represents the greatest opportunity of all highway failures for loss of life. Therefore, it is imperative that bridges be constructed to the same, or higher, design standards as the system of which they are a part.

Congress enacted the National Bridge Inspection Standards on April 27, 1971, implementing the Federal Highway Act of 1968. The Standards require that all structures defined as bridges located on any of the Federal-Aid Highway Systems be inspected and that the safe load carrying capacity be computed at regular intervals, not to exceed two years. A sufficiency index number has been calculated for each bridge for the purpose of establishing eligibility and priority for replacement. The bridges with the highest priority are replaced as Federal-Aid funds and State funds become available.

The North Carolina Bridge Maintenance Unit has been assisted by consultants in inspecting all bridges on the State Highway System. All bridges in the planning area have been analyzed, rated, appraised, inventoried, and the resulting data has been reduced to a more readily useable form as a management tool.

A sufficiency rating is used in the analysis to help determine if a particular bridge is below standards. The sufficiency rating is a method of evaluating factors which are indicative of a bridge's ability to remain in service. Factors include structural adequacy and safety, serviceability and functional obsolescence, essentiality for public use, type structure, and traffic safety features. The result of this method is a percentage in which 100 percent would represent an entirely sufficient bridge and zero percent would represent an entirely insufficient bridge. A sufficiency rating of 50 or less qualifies for Federal Bridge Replacement funds.

Substandard bridges can be further classified into two categories: 1) structurally deficient; and 2) functionally obsolete. Structurally deficient bridges are in relatively poor condition or have insufficient load carrying capacity. Functionally obsolete bridges are narrow, have inadequate underclearances, have insufficient load carrying capacity, or are poorly aligned with the roadway and can no longer adequately serve today's traffic.

**Table 2** is a list of substandard bridges located on routes included in the Thoroughfare Plan. **Figure 6** shows the location of substandard bridges in the Wilkesboro-North Wilkesboro area.

**TABLE 2**

| <b>SUBSTANDARD BRIDGES IN WILKESBORO-NORTH WILKESBORO</b> |                                |      |                |
|---|--------------------------------|------|----------------|
| MAP<br>INDEX  | LOCATION                       |      |                |
|   | STRUCTURALLY DEFICIENT BRIDGES |      |                |
| 1   | * SR 1185                      | over | Yadkin River   |
| 2   | SR 1001                        | over | Cub Creek      |
| 3   | NC 18                          | over | Yadkin River   |
| 4   | NC 268                         | over | Mulberry Creek |
|   | FUNCTIONALLY OBSOLETE BRIDGES  |      |                |
|   |                                |      |                |
| 5   | US 421 Business                | over | Reddies River  |
| 6   | SR 1517                        | over | Reddies River  |
| 7   | NC 115                         | over | US 421 Bypass  |
| 8   | US 421 Bypass                  | over | NC 268         |
| 9   | SR 2461                        | over | US 421 Bypass  |

\* Currently being replaced under TIP B-1452

### **Traffic Accidents**

Traffic accident records are useful in locating problem areas on the highway system. A study of traffic accidents that occurred within 200 feet of intersections in Wilkesboro and North Wilkesboro provided the information contained in **Table 3**. The table lists high accident locations (15 or more over the three year period from January 1988 to January 1991) with the corresponding number of accidents for intersections in the planning area.

**TABLE 3**

| <b>HIGH ACCIDENT LOCATIONS</b> |        |
|--------------------------------|--------|
| INTERSECTION                   | NUMBER |
| US 421 Byp @ NC 268            | 18     |
| US 421 Bus @ Curtis Bridge Rd  | 21     |
| Cherry St @ Main St            | 22     |
| NC 18 @ NC 268                 | 30     |

The frequency of accidents occurring at the intersection of US 421 Business and Curtis Bridge Road should be alleviated by two future improvements: 1) the NC 268 Bypass will decrease the heavy travel on US 421 Business through this intersection; and 2) the

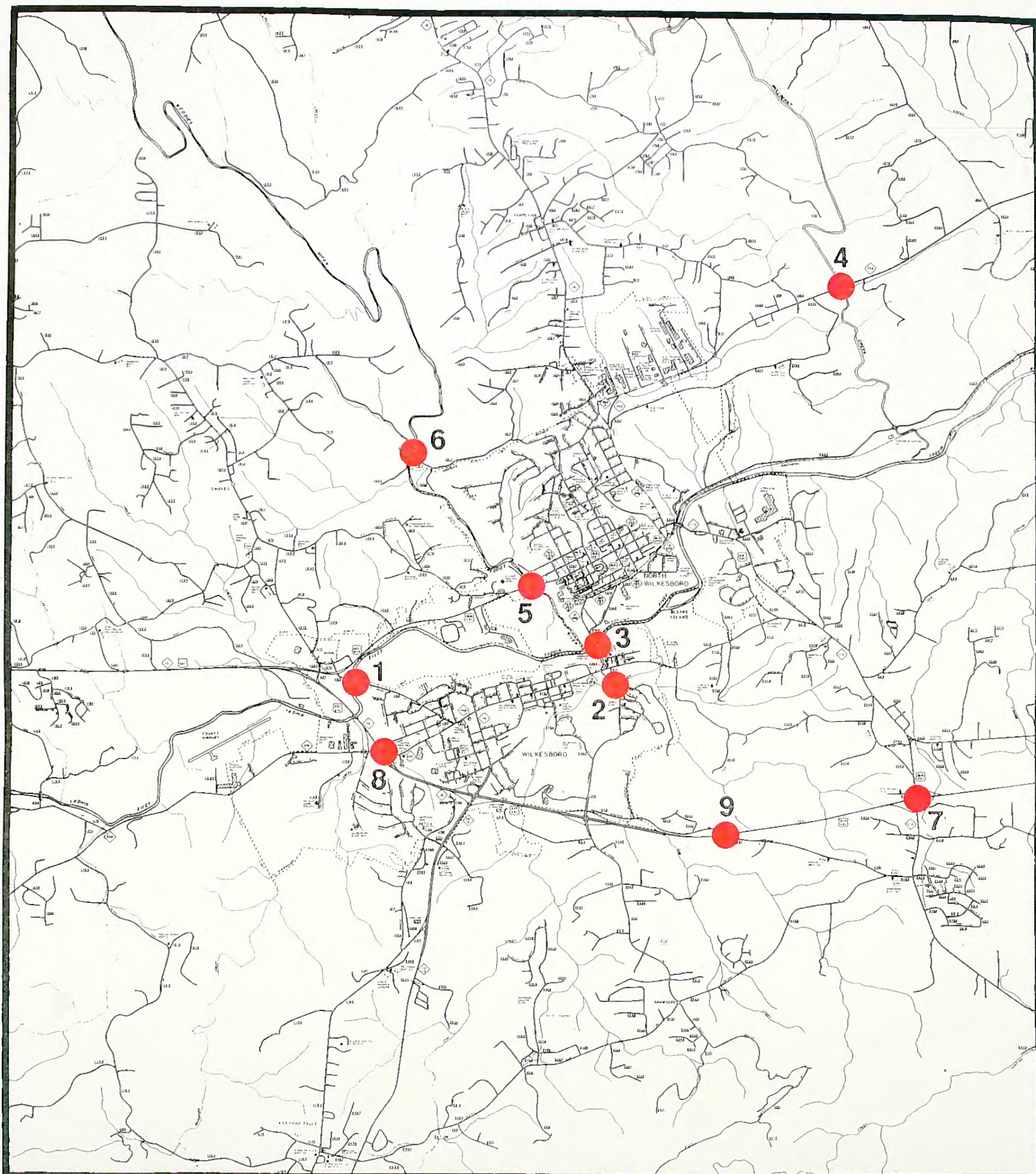


programmed improvements to US 421 (TIP R-2240) will carry traffic further to the south.

The proposed SR 1971 Loop will help alleviate congestion at the intersection of NC 18 and NC 268. Also, the proposed NC 268 Bypass should include improvements to this intersection. The accident frequency on Main Street in Wilkesboro should be reduced when the Main Street relocation is implemented. The combined elements of the Thoroughfare Plan should increase the overall safety.







# SUBSTANDARD BRIDGE LOCATIONS

## LEGEND

SUBSTANDARD BRIDGE



**NORTH WILKESBORO**  
**WILKESBORO**  
 AND VICINITY  
 WILKES COUNTY  
 NORTH CAROLINA

Prepared by the  
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS - PLANNING AND RESEARCH SECTION  
 in cooperation with the  
 U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAYS ADMINISTRATION

FIGURE 6







## V. TRANSPORTATION IMPROVEMENT PROGRAM

The Transportation Improvement Program (TIP) is an annual listing of all projects that the NCDOT has programed for funding and/or implementation for the seven years following its publication. Each listed project is accompanied by a brief description and a schedule that shows when the planning, design, right-of-way acquisition, and construction will begin.

There are several significant projects already programed for the Wilkesboro-North Wilkesboro planning area. The combination of these projects and the recommended improvements in the Thoroughfare Plan will accommodate the design year traffic.

The following projects listed in the 1992 TIP are located in the planning area:

| <u>Route</u> | <u>TIP #</u> | <u>Description</u>  |
|--------------|--------------|---|
| NC 18        | R-2517       | NC 268A to SR 1002. Widen roadway to a multi-lane facility.   |
| NC 18/268    | R-616        | Wilkesboro-North Wilkesboro Bypass, NC 18 to US 421. Two lanes on four lane right of way, part on new location.                   |
| NC 268       | R-2603       | Multi-lanes east of NC 18 to SR 1966. Widen roadway to a multi-lane facility.   |
| US 421       | R-2239       | Wilkesboro to I-77. Widen roadway to four lanes.  |
| US 421       | R-2240       | Four lanes east of Maple Springs to east of NC 268 in Wilkesboro. Widen roadway to four lanes.                                    |
| "D" St       | U-2718       | US 421 Business ("D" Street), CBD Loop to NC 18/268 in North Wilkesboro. Widen roadway to multi-lanes and extend on new location. |
| US 421/16    | W-2861       | Wilkesboro, SR 1323 to SR 1322. Widen existing roadway to five lanes.   |
| US 421/16    | W-2817       | Wilkesboro, SR 1322 (Winkler Rd) to north of SR 1323 (Dancy Rd). Construct additional northbound through lane and install signal. |

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## **VI. PHASE I ENVIRONMENTAL ANALYSIS**





## GENERAL CONCURRENCE POINTS FOR THE WILKESBORO-NORTH WILKESBORO PHASE I ENVIRONMENTAL ANALYSIS

The following Chapter represents a Phase I Environmental Analysis Report which was developed under the umbrella of the National Environmental Policy Act of 1969, as amended. As the project develops, NCDOT and/or FHWA shall ensure that NEPA and/or SEPA guidelines are followed throughout the project planning process.

The signatory agencies on the following page agree to the following concurrence points:

1. The preferred corridors identified in the Phase I Environmental Analysis Report are the only corridors for which this concurrence is being given.
2. The Towns of Wilkesboro and North Wilkesboro shall, to the extent possible, protect the preferred corridors so that development does not foreclose the viability of the preferred corridors.
3. The preferred corridors identified in the Phase I Environmental Analysis Report will be the only corridors to be studied in subsequent environmental documents related to individual project implementation, unless unexpected environmental consequences are identified by any of the agencies participating in this agreement; or if laws or regulations change after concurrence with the preferred corridors identified in the Phase I Environmental Analysis Report; or if the local Government(s) have not actively participated in protecting the preferred corridors. If the preferred corridors become unacceptable as a result of any of the above, additional consideration of alternatives will be undertaken by the North Carolina Department of Transportation.
4. In accordance with the Laws, Regulations, Mitigation Memorandum of Agreement, and any subsequent Federal mitigation guidelines in effect at the time of project implementation (when a permit application is filed), appropriate and reasonable mitigation is both expected and required of FHWA and NCDOT for any environmental or cultural impacts identified by the participating agencies in subsequent studies within the preferred corridors.

Concurrence Points  
Wilkesboro/North Wilkesboro

see attached

US Army Corps of Engineers

Date

*Reinz Mueller*

*12-13-93*

US Environmental Protection Agency

Date

see attached

US Fish & Wildlife Service

Date

*William S. Pinner, Jr.*

*11-15-93*

NC State Historic Pres. Officer

Date

see attached

NC Wildlife Resources Commission

Date

*A. L. Lundy*

*1-5-94*

NC Div. of Environmental Management

Date

*Roy C. Shelton*

*11-4-93*

Federal Highway Administration

Date

*Marvin R. Poole*

*11-4-93*

NC Dept. of Transportation

Date

*Norman Call*

*11-3-93*

Wilkesboro Town Manager

Date

*Chris A. Carter*

*11-3-93*

North Wilkesboro Town Manager

Date



DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS

P.O. BOX 1890  
WILMINGTON, NORTH CAROLINA 28402-1890

IN REPLY REFER TO

January 6, 1994

Regulatory Branch

Action ID 199200572

Mr. Paul Koch  
Statewide Planning  
North Carolina Department  
of Transportation  
Post Office Box 25201  
Raleigh, North Carolina 27611

Dear Mr. Koch:

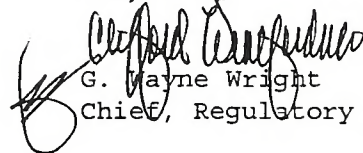
Reference is made to your request for confirmation by signature for the proposed general concurrence points statement for the Wilkesboro-North Wilkesboro Thoroughfare Plan, Wilkes County, North Carolina. That document essentially states that the Wilmington District will not consider any alternatives other than the preferred alternative in any future environmental documentation, absent certain circumstances.

The District's legal staff has advised that the District not execute this document. It is highly likely that the Corps of Engineers will be asked to issue a Clean Water Act permit for some of the work connected with the projects described in the Phase 1 Environmental Analysis Report of the Wilkesboro-North Wilkesboro Thoroughfare Plan. Our permit program requires that we make a complete, thorough, and unbiased review of all factors associated with a proposed project within jurisdictional waters of the United States. A major component of that review is the consideration of reasonable and practicable alternatives, required by both the National Environmental Policy Act, and the Clean Water Act 404(b)(1) guidelines (33 U.S.C. Section 1344(b); 40 CFR Section Part 230). The Clean Water Act requires that individual permit decisions be made "after notice and opportunity for public hearings" (33 U.S.C. Section 1344(a)). Based on these requirements, we believe it is inappropriate for the Wilmington District to make any binding commitment concerning the selection of a single preferred alternative prior to going through the permit process required by our regulations, found at 33 CFR Part 325.

The District can, however, review, comment, and make recommendations in the planning review of alternative corridors with reference to potential Department of the Army permit concerns. As stated in our earlier letters to you of August 3, 1993, and November 15, 1993, we continue to support your choice of preferred corridors based upon our review of all information provided by your staff.

Should you have any questions, please contact Mr. John Thomas, Raleigh Regulatory Field Office, telephone (919) 876-8441, extension 25.

Sincerely, .

  
G. Wayne Wright  
Chief, Regulatory Branch

Copies Furnished:

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Water Quality Section  
Division of Environmental  
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North Carolina Department of  
Environment, Health and  
Natural resources  
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Raleigh, North Carolina 27611-7687

Ms. Janice Nichols  
U.S. Fish and Wildlife Service  
Asheville Field Office  
330 Ridgefield Court  
Asheville, North Carolina 28806

Mr. David Yow  
Habitat Preservation Program  
North Carolina Wildlife  
Resources Commission  
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Northside, North Carolina 27564

Mr. Frank Vick, P.E., Manager  
Planning and Environmental Branch  
North Carolina Department  
of Transportation  
Division of Highways  
Post Office Box 25201  
Raleigh, North Carolina 27611-5201





# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Asheville Field Office  
330 Ridgefield Court  
Asheville, North Carolina 28806

December 1, 1993

Mr. Paul Koch, Project Engineer  
Division of Highways  
North Carolina Department of Transportation  
P.O. Box 25201  
Raleigh, North Carolina 27611

Dear Mr. Koch:

Subject: Wilkesboro-North Wilkesboro Thoroughfare Plan, Wilkes County,  
North Carolina

This is to follow-up on our October 15, 1993, letter regarding the subject project and the signing of the concurrence points statement. The following comments are provided in accordance with the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e), and Section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543).

Our office has discussed this project, the concurrence points statement, and the overall corridor preservation process with representatives in the U.S. Fish and Wildlife Service's (Service) Regional Office in Atlanta, Georgia, and with our national office in Washington, D.C. After much consideration, we have come to the following decisions for the Wilkesboro-North Wilkesboro project. The Service supports the selection of the preferred corridors, especially the development of a new preferred corridor (C3) in the final draft environmental report in order to avoid the wetlands adjacent to SR 1517. We believe that the preferred corridors, as stated in the final environmental report, represent the least environmentally damaging alternatives, given the information presently available, and we encourage the town managers to take initiatives to protect these corridors from further development.

However, after much deliberation, the Service has decided not to sign the general concurrence points statement for the Wilkesboro-North Wilkesboro project. We appreciate the consideration given our suggestions as outlined in our September 14, 1993, letter regarding the final draft version, but we still have reservations about signing a general concurrence statement. As noted in our July 8, 1993, letter, we are concerned that this general concurrence statement is subject to interpretation and we maintain that individual agency letters (including letters from town managers) on specific thoroughfare projects should suffice as the administrative file to prompt protection of the preferred corridors.

In our opinion, the signing of the general concurrence statement implies support not only for this pilot project, but also for the process. While we support the selection and protection of the preferred corridors for the Wilkesboro-North Wilkesboro project, we still have significant concerns about the selection process. Indeed, the Service believes the corridor preservation process is precedent setting and that this particular pilot project may well set the pace for future efforts. Thus, we would like to reiterate our two major concerns about the process. The Service's Southeast Regional and Washington Office support our concerns.

- o A rigorous environmental review of all available alternatives needs to be conducted during the corridor preservation planning process. We believe that more intensive field surveys and data collection on potential natural resources impacts needs to be a major component of the corridor planning process. As the Service and other agencies have indicated, available data on wetlands (e.g., National Wetland Inventory) and threatened and endangered species (e.g., Natural Heritage Element Occurrences) have their limitations. Thus, field surveys are necessary in order to collect information for a more thorough analysis of alternatives. We believe the more thorough the field investigations are during the corridor planning process, the less chance there will be for "unexpected environmental consequences" to come up later, potentially at a time when there are fewer options and less flexibility.
- o The North Carolina Department of Transportation (NCDOT) should provide all of the above mentioned data to resource/regulatory agencies for their review and comment. The resource/regulatory agencies should not be asked to do the necessary field investigations for these projects. While agencies may be willing to contribute to field reviews, the responsibility for data collection rests solely on the project proponent and the funds necessary to conduct this work should be sought. We believe a commitment of funds and manpower to collect the necessary natural resources data during the corridor planning stage will not only prompt more substantive comments from resource/regulatory agencies, but will also facilitate a more expedient review during later planning stages.

Finally, we believe that identification and protection of potential mitigation areas associated with any wetland losses should be conducted during the corridor preservation process. While not necessarily applicable in the Wilkesboro-North Wilkesboro project, other projects may require wetlands mitigation. Protection of mitigation sites should be incorporated into the overall corridor preservation process.

The Service maintains that the corridor preservation process has tremendous potential and we strongly encourage the NCDOT and the Federal Highway Administration (FHA) to continue to pursue and improve this process. We found that the process encourages more interaction and exchange between the resource agencies and the NCDOT in the early stages

of project planning. Most importantly, the process has the potential to not only meet the needs of the particular local community for traffic control, safety, and economic development, but also to best serve the general public's interest in protecting our nation's natural resources. The Service is committed to assisting the NCDOT with fine tuning the corridor preservation process.

Again, the Service appreciates the level of effort undertaken by the NCDOT and the FHA in coordinating and soliciting input for the Wilkesboro-North Wilkesboro project. In any future correspondence concerning this project, please reference our Log Number 4-2-92-076.

Sincerely,



Brian P. Cole  
Field Supervisor

cc:

Mr. Dennis L. Stewart, Program Manager, Division of Boating and Inland Fisheries, North Carolina Wildlife Resources Commission, Archdale Building, 512 N. Salisbury Street, Raleigh, NC 27604-1188  
Mr. Ken Jolly, U.S. Army Corps of Engineers, Raleigh Regulatory Field Office, 6512 Falls of the Neuse Road, Suite 105, Raleigh, NC 27615  
Ms. Cherry Green, U.S. Fish and Wildlife Service, 75 Spring Street, SW., Atlanta, GA 30303

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## ☒ North Carolina Wildlife Resources Commission ☒

512 N. Salisbury Street, Raleigh, North Carolina 27604-1188, 919-733-3391  
Charles R. Fullwood, Executive Director

March 23, 1994

Mr. Paul Koch  
Project Engineer  
Statewide Planning Branch, NCDOT  
P. O. Box 25201  
Raleigh, North Carolina 27611-5201

Dear Mr. Koch:

Biologists of the N. C. Wildlife Resources Commission (NCWRC) have reviewed the Final Draft Phase I Environmental Analysis for the Wilkesboro-North Wilkesboro Corridor Preservation Pilot Project. Our comments are based on our participation in the project since June 1992 and are intended to clarify our position on the attached concurrence points statement.

The NCWRC concurs with the findings of the analysis document that corridors A-3, B-1, C-3, and D-2 are the preferred corridors to be protected from future non-highway development. This NCWRC concurrence with the Pilot Project findings depends on continued preservation of these corridors by the appropriate planning organizations. If present or future municipal governments allow non-highway development to encroach upon a protected corridor, the NCWRC will no longer consider that corridor to be protected under the concurrence points statement. Subsequent highway projects in an unprotected corridor should undergo full environmental review, including alternatives analysis.

Concurrence with the preferred corridors is based on best available information and present environmental regulations. It is the understanding of the NCWRC that permitting and subsequent mitigation of road projects will adhere to regulations and guidelines in effect at the time of permit application. Future changes in such regulations or guidelines should be coordinated with the NCWRC and other review agencies to re-evaluate the corridor selection process.

The process of corridor selection has identified important natural and cultural resources in the project area, including possible wetland mitigation sites. Because corridor selection is based on avoidance of such resources, the NCWRC encourages the

appropriate municipal governments to make efforts to avoid sensitive resources in future development planning. The information on wetlands, threatened and endangered species, surface waters, and possible mitigation sites provided by the thoroughfare planning process should aid municipal planners in future zoning or building permit situations. The present agreement seeks to protect resources within the preferred highway construction corridors. If non-highway development is allowed to destroy or degrade off-site resources identified by the current process, the protected highway corridors may hold the only remaining sites of such resources in the study area at the time of actual highway project development. In such a situation, the NCWRC would likely recommend re-evaluation of alignment alternatives.

The NCWRC appreciates the opportunity to participate in this very promising and innovative approach to long range urban transportation planning. As always, our staff are available to provide technical guidance upon request from your office. If you require further information or assistance, please contact our Habitat Conservation Program field office at (919) 528-9886.

Sincerely,

*Richard B. Hamilton*

Richard B. Hamilton  
Assistant Director  
N. C. Wildlife Resources Commission

RBH/dly

cc: The Hon. Richard P. Budd, Commissioner, District 7  
David Yow, Interim Manager, Habitat Conservation Program  
David Sawyer, District 7 Wildlife Biologist  
Joe Mickey, District 7 Fisheries Biologist  
Brian P. Cole, Field Supervisor, USFWS Asheville Office  
Ken Jolly, Manager, USACE Raleigh Regulatory Field Office  
John Dorney, DEM, Water Quality Section

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## I. INTRODUCTION

### Purpose

The primary goal of this Environmental Analysis is to establish preferred alignments in the Wilkesboro-North Wilkesboro Thoroughfare Plan and justify early protection of their corridors. Preferred corridor selection is based on the minimization of environmental impacts and results from a cooperative process involving state and federal resource and regulatory agencies, local town and planning boards, and the locally affected public.

### Integration with NEPA Process

This analysis is an initial environmental screening of alternative alignments to thoroughfare plan improvements. The result is the selection of one preferred corridor for each recommended improvement. Once the project becomes programed for funding, detailed environmental studies will be completed on each preferred corridor according to National Environmental Policy Act (NEPA) guidelines. Further avoidance and minimization will be carried out within the preferred corridor as a result of these detailed environmental studies. Appropriate mitigation and required permits will also be identified at this time.

### Benefits

Early selection and protection of preferred alignments results in several major benefits.

- a) **Reduced environmental impacts:** If a corridor is not protected, encroaching development can force a proposed thoroughfare plan corridor to shift. Such a change in a corridor can, and most likely will, create an increase in both environmental impacts and costs. Early protection should eliminate the possibility of future development in the preferred corridors.
- b) **Increased public confidence:** Because of increased early emphasis on environmental impacts, the continuous involvement of the regulatory and resource agencies, and the use of corridor protection, there is a greater likelihood that the thoroughfare plan corridor presented at a public hearing will actually be constructed. The public confidence will increase because of the decreased chance that the corridor will be changed due to a project planning level alternatives analysis.

- c) **Decreased project cost:** Project cost should decrease significantly due to the prevention of future development in the corridor. This will keep right-of-way acquisition costs to a minimum. Mitigation costs, if necessary, should also be kept to a minimum because the preferred corridor causes the least environmental impacts compared to the alternatives.

Overall the efficiency and effectiveness of implementing transportation solutions will improve due to decreased right-of-way costs, improved turn-around in environmental review and permit acquisition times, less mitigation costs, decreased risk of environmental infractions, and increased support from both the agencies and the public.

### **Process**

Problems such as capacity deficiencies, high accident locations, and lack of route continuity were identified in the preliminary stages of the thoroughfare planning process. Improvements to solve these problems were then formulated. For each needed improvement, feasible alternative alignments were considered. These alternative alignments were then evaluated by their impact on several environmental factors. The goal is to select a preferred corridor that causes the least overall impact. The environmental factors and corridor widths used to evaluate each of the improvements are listed below.

#### Environmental Factors

- |  |                             |
|--|-----------------------------|
| -Historic Properties                                       | -Archaeological Sites       |
| -Section 4f Properties                                     | -Wetlands                   |
| -Hydrologic Crossings                                      | -Watershed Impacts          |
| -Habitat/ Natural Systems                                  | -Relocations                |
| -Known Occurrences of State and Federal Endangered Species | -Subdivisions/Neighborhoods |
| -Hazardous Materials Sites                                 | -Proposed Developments      |
|  | -Cultural Resources         |

#### Corridor Widths

| Improvement:          | Width (feet) |
|-----------------------|--------------|
| A                     | 150          |
| B                     | 150          |
| C                     | 300          |
| D (SR 1372 to US 421) | 300          |
| D (US 421 to NC 268 ) | 150          |



## **The "Do Nothing" Alternative**

An alternative to any proposed improvement is the "do-nothing" concept. Obviously this concept does not present any adverse environmental effects which may be incurred by implementation of proposed improvements. A further advantage of a "do nothing" policy is no additional capital expenses are required.

There are however several disadvantages to a "do nothing" policy with regard to transportation planning. These include:

1. Naturally increasing traffic volumes which congest existing major streets.
2. As major streets become congested, residential streets will be used more frequently by through traffic.
3. Existing "bottle-neck" situations will worsen.
4. Economic, social, health, and safety standards will deteriorate.
5. Increased air pollution and noise pollution due to traffic congestion.
6. Increased car user cost.
7. Increased driving time.
8. Increased driver and public frustration due to congestion.

Due to these disadvantages, the "do nothing" concept was not considered a viable alternative in this study.

## **Environmental Resource Agency Involvement**

This document is the result of a cooperative effort between the Statewide Planning Branch of the North Carolina Department of Transportation and the Environmental Resource and Regulatory Agencies. The Agencies were involved at the early stages of the thoroughfare planning process and participated from the problem identification phase through to the Towns' adoption of the plan and the completion of the Phase I Environmental Analysis. The selection of preferred alignments is based on their input.

The key points of Resource Agency involvement are as follows:

- 1) (11/21/91) The Agencies were presented with deficiencies in the existing traffic network of the planning area. Therefore, they were able to see the problem and the need for improvements before any recommendations were made. At this point they were asked to provide information and comments on environmental concerns in the planning area.

- 2) (07/07/92) Following the public informational meeting, alternative solutions to system deficiencies were presented to the Resource Agencies for their evaluation. Based on their review, preferred alignments were selected from the alternates. The preferred alignments are the alternatives that meet the project needs while causing the least negative environmental impacts.
- 3) (On-going) Once the preferred alignments were selected, the agencies were consulted when more detailed information was needed on environmental concerns in the right-of-ways of the preferred alignments.

### **Public and Municipal Government Involvement**

The Municipality initially requests the development of a thoroughfare plan and is therefore involved at the earliest stages. It is extremely important to make the public aware of the thoroughfare planning process as early as possible so that they may provide input. The following is a list of Public and Municipal involvement.

- 1) (02/12/92) A discussion with the local planning boards took place after capacity deficiencies were identified. The purpose of this meeting was to introduce the Planning Boards to the thoroughfare planning process. It also served to discover what the Planning Boards perceived to be their most important local transportation problems.
- 2) (04/14/92) A public informational meeting was also held before any proposed improvements were developed. This meeting was held to introduce the public to the process and to discuss capacity problems that had been identified.
- 3) (01/25/93) A meeting was held with representatives from the Town Councils and Planning Boards of both Wilkesboro and North Wilkesboro to discuss the alternative alignments and the selection of preferred alternative alignments. The recommended thoroughfare plan was presented.
- 4) (04/08/93) A public hearing on the recommended thoroughfare plan was held. The recommended plan consisted of the preferred alternatives resulting from this analysis. All of the alternatives were also presented and the environmental analysis process was discussed. The floor was opened to public comments which were recorded and transcribed. Responses to substantive comments are included in appendix B.

## Organization

The Environmental Analysis contains the evaluation of alternative alignments for each needed improvement and demonstrates the reasons for selecting the preferred alternative alignments.

A subsection is devoted to each improvement and its feasible alternative alignments. The beginning of each subsection describes the present and projected conditions that warrant an improvement. Each alternative is then described and evaluated on the basis of the environmental impacts mentioned in the introduction.

A summary of impacts is given in tabular form at the end of each subsection. This table compares the environmental impacts of all the alternative alignments for the respective improvement. In addition, a table is given at the end of the report that demonstrates the total impacts of the preferred alternatives.

## Graphic Aids

All studied alternative alignments are shown on USGS Quad maps (**Figs. 2-6**). They are also shown on a GIS plot (**Fig. 7**) that displays environmental data. The GIS plot is useful because it displays several layers of known environmental data on a base map. It shows the proximity of the alignments to environmental concerns in the planning area.





## II. PROJECTED CONDITIONS and IMPROVEMENT NEEDS

Thoroughfare planning is a process whose objective is to develop a transportation system that will enable people and goods to travel safely and economically. To determine the needs of an area its population, land use, and traffic must be examined. To make these determinations, it is important to understand and describe the type and volume of travel that takes place in that area, and also to identify clearly the goals and objectives to be met by the transportation plan.

In order to fulfill the objectives of an adequate twenty year thoroughfare plan, reliable forecasts of future travel patterns must be achieved. Such forecasts are possible only when the following major items are carefully analyzed: (1) historic and potential population changes; (2) significant trends in the economy; and (3) character and intensity of land development. Additional items that vary in influence include the effects of legal controls such as zoning ordinances and subdivision regulations, availability of public utilities and transportation facilities, and topographic and other physical features of the urban area.

### Population Trends

Travel is directly related to population. The volume of traffic on any road is a direct result of the size and distribution of the area's population. The planning area has experienced a slow but steady growth in the past few years. The population figures and design year projections are displayed in the following table.

TABLE 1

| POPULATION       |        |        |        |        |
|------------------|--------|--------|--------|--------|
|                  | 1980   | 1990   | 2010   | 2020   |
| WILKES COUNTY    | 58,657 | 59,393 | 65,516 | 68,810 |
| NORTH WILKESBORO | 3,260  | 5,284  | —      | —      |
| WILKESBORO       | 2,335  | 4,211  | —      | —      |
| PLANNING AREA    | 11,438 | 11,582 | 12,776 | 15,198 |

\* Sources NC State Department of Budget and Management  
& Region D Council of Governments projections

## Traffic Forecasts

A computer traffic model (TRANPLAN) was used to simulate the existing traffic on the Wilkesboro-North Wilkesboro road network. The trip generation is based on the number, distribution, and classification of dwelling units in the planning area. The Region D Council of Governments supplied the dwelling unit information for the base year (1990) and projected dwelling unit growth through the design year (2020). The base year information was used to generate volumes that were calibrated to match field traffic counts. Once the model was calibrated, the projected dwelling unit and projected external traffic information were input to the model. This input yielded the design year traffic projections.

The projected traffic was compared to the estimated capacity of each section of road on the network. Deficiencies are identified at every section where projected volume exceeds capacity. Capacity is based on the operation of a facility at a level of service of D. Road segments that are projected to exceed capacity by the design year are highlighted in **Figure 1**.

## Improvement Needs

The scope of improvements recommended in the thoroughfare plan are dependant primarily on the capacity deficiencies identified in **Figure 1**. Other factors that warrant improvements are system discontinuity and high accident rates. The major improvements in the thoroughfare plan that are considered appropriate for corridor preservation are detailed in the Environmental Analysis and shown on **Figure 2**. Each improvement is listed below along with a summary of its need. All traffic volumes tabulated in the following section are Average Daily Traffic (ADT). The traffic projections are based on the **existing system only**. Projected volumes resulting from the implementation of the Thoroughfare Plan are shown in **Chapter VII, Figure 9** of the Wilkesboro-North Wilkesboro Thoroughfare Plan.

### A. Main Street in Wilkesboro:

This purpose of this improvement is to alleviate congestion on Main Street through the design year.

Main St

|              |        |
|--------------|--------|
| 1990 Traffic | 15,000 |
| 2020 Traffic | 20,000 |
| Capacity     | 11,000 |

B. Eastern Loop

The primary purpose of this improvement is to alleviate congestion on NC 18-268. It also serves as an alternate North-South route which improves the system continuity in the planning area.

NC 18-268

|              |        |
|--------------|--------|
| 1990 Traffic | 19,000 |
| 2020 Traffic | 27,000 |
| Capacity     | 22,000 |

C. NC 268 Bypass

The purpose of this improvement is to alleviate congestion on sections of US 421 Business, NC 18-268, Main St (Wilkesboro), and eliminate cut-through traffic in the residential section of North Wilkesboro (Finley, Hinshaw, Trogon, 6th, 9th, 10th streets). It also improves system continuity by extending NC 268 to the West. The following table shows the deficient corridors that will be improved implementing the NC 268 Bypass.

US 421 Bus    NC 18-268    Main St

|              |        |        |        |
|--------------|--------|--------|--------|
| 1990 Traffic | 25,000 | 19,000 | 15,000 |
| 2020 Traffic | 32,000 | 27,000 | 20,000 |
| Capacity     | 28,000 | 22,000 | 11,000 |

D. Western Connector

The purpose of this improvement is to alleviate traffic on SR 1372 and extend the NC 268 Bypass. This will improve system continuity by connecting NC 268 on the east side of the planning area with US 421 Bypass and NC 268 on the west side of the planning area. This improvement is contingent on the completion of improvement C. The projected traffic for SR 1372 is based on the NC 268 Bypass terminating at SR 1372.

SR 1372

|              |        |
|--------------|--------|
| 1990 Traffic | 6,700  |
| 2020 Traffic | 20,000 |
| Capacity     | 11,000 |





1. Major Arterial  
 2. Minor Arterial  
 3. Collector  
 4. Local  
 5. Unimproved  
 6. Waterway  
 7. Railroad  
 8. Airway  
 9. Boundary  
 10. Elevation  
 11. Spot Elevation  
 12. Contour  
 13. Spot Contour  
 14. Spot Elevation  
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 94. Spot Elevation  
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 96. Spot Elevation  
 97. Spot Contour  
 98. Spot Elevation  
 99. Spot Contour  
 100. Spot Elevation

FIGURE 1



DESIGN YEAR  
 OVER CAPACITY  
 OVER CAPACITY

NORTH  
 WILKESBORO  
 AND VICINITY  
 WILKES COUNTY  
 NORTH CAROLINA  
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS, PLANNING AND RESEARCH BRANCH  
 U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 MAY 1963

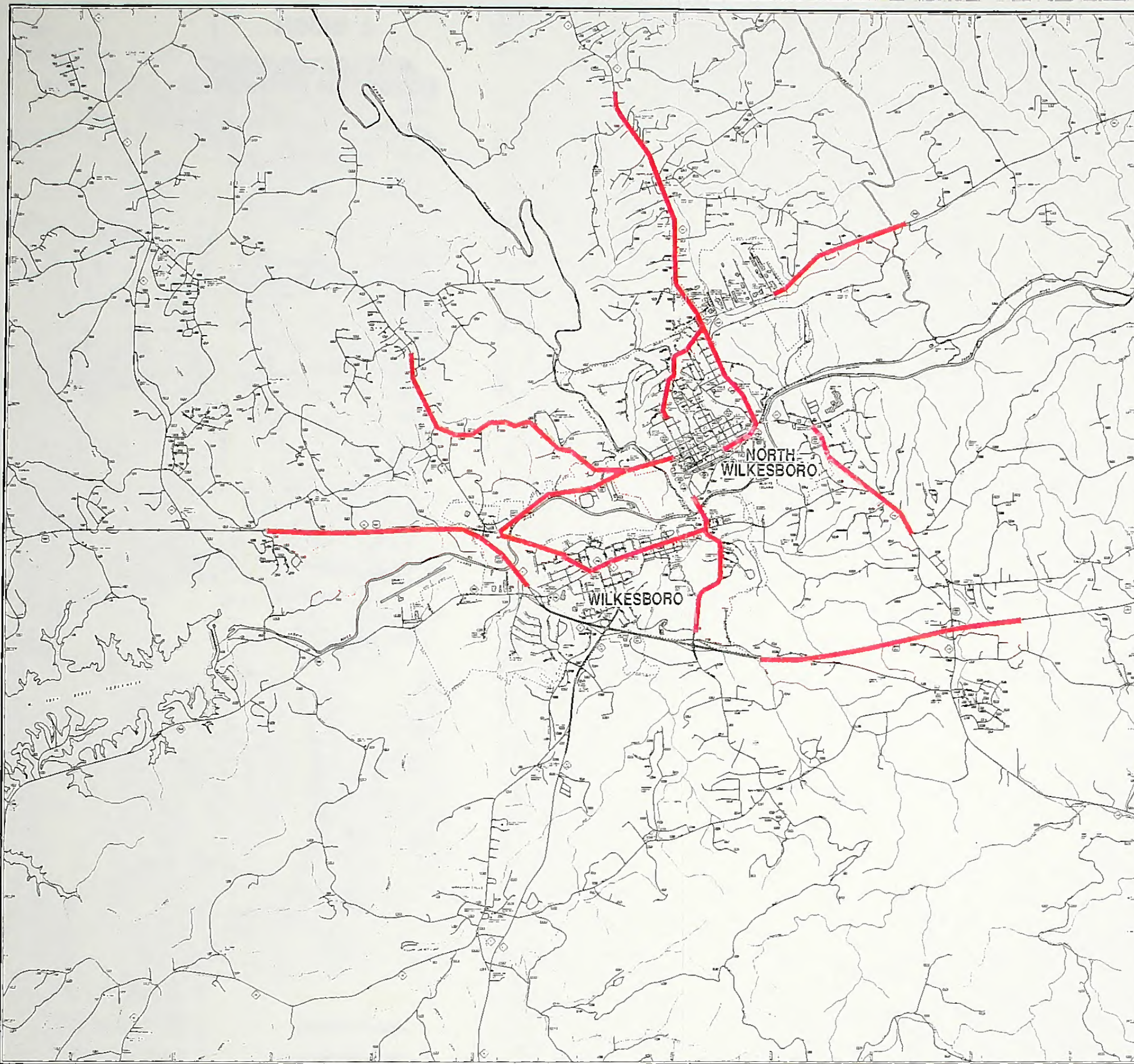


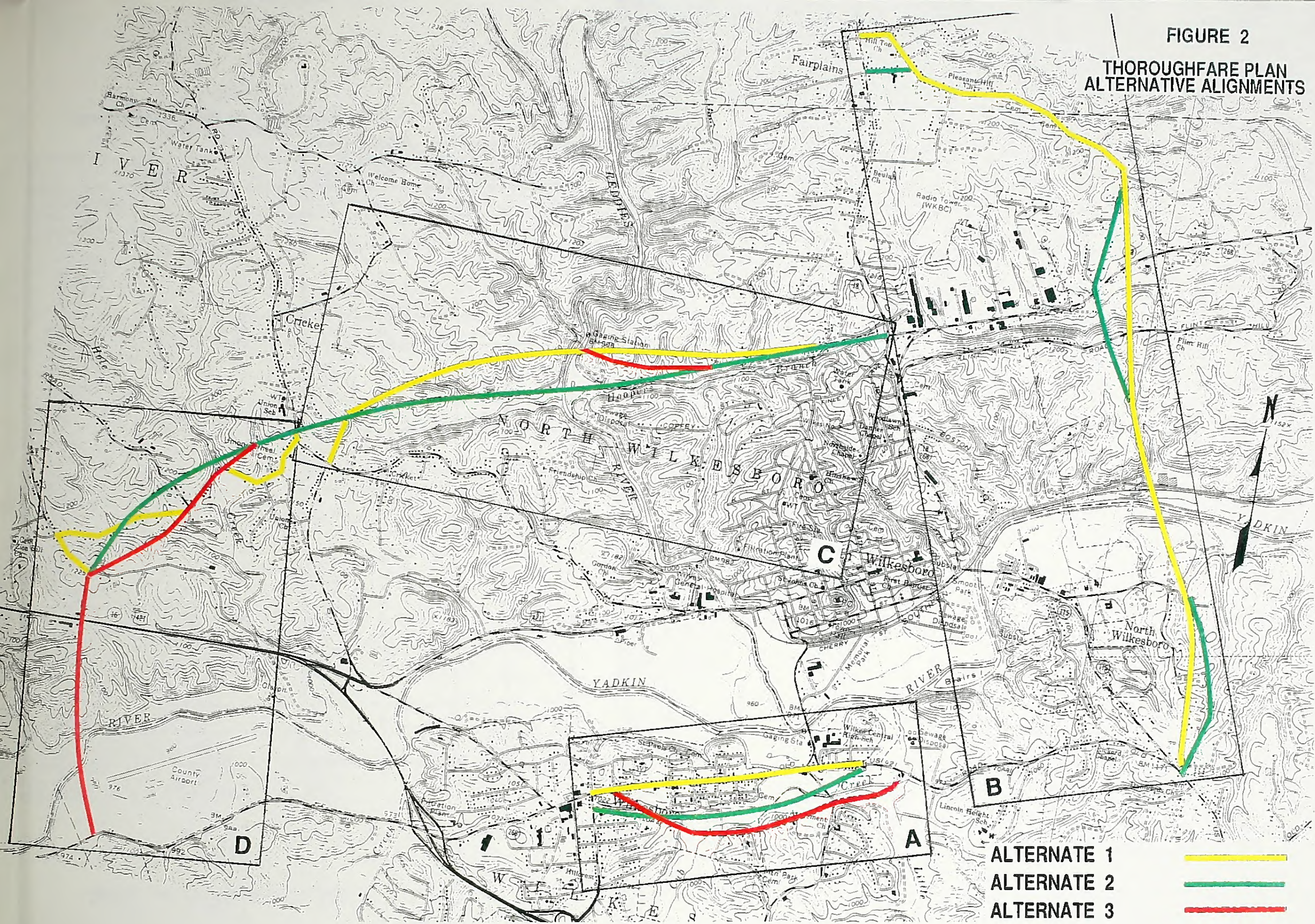






FIGURE 2

THOROUGHFARE PLAN  
ALTERNATIVE ALIGNMENTS



- ALTERNATE 1
- ALTERNATE 2
- ALTERNATE 3









TABLE 2

TOTAL IMPACTS SUMMARY FOR THOROUGHFARE PLAN  
PREFERRED CORRIDORS

| CATEGORY   | Preferred Corridor |      |      |      | TOTALS |
|--|--------------------|------|------|------|--------|
|  | A-3                | B-1  | C-3  | D-2  |        |
| Length (mi)  | 1.30               | 4.17 | 2.63 | 2.31 | 10.41  |
| Number of Intersections                            | 6                  | 5    | 5    | 5    | 21     |
| Estimated Relocations:                             |                    |      |      |      |        |
| Residential  | 2                  | 2    | 13   | 18   | 35     |
| Business   | 0                  | 1    | 6    | 2    | 9      |
| Farms  | 0                  | 0    | 0    | 0    | 0      |
| Miles in Protected Watershed                       | 0                  | 0    | 0    | 0    | 0      |
| Hydrologic Crossings:                              |                    |      |      |      |        |
| Normal   | 2                  | 1    | 2    | 2    | 7      |
| Trout Waters *                                     | 0                  | 0    | 0    | 0    | 0      |
| Known Hazardous Materials Sites                    | 0                  | 0    | 0    | 0    | 0      |
| Biotic Communities:                                |                    |      |      |      |        |
| Forested   | 16.4               | 40.0 | 80.7 | 44.8 | 181.9  |
| Wetlands (impacted acres)<br>(derived from survey) | 0.0                | 0.0  | 1.0  | 0.0  | 1.0    |
| Cultural Resources:                                |                    |      |      |      |        |
| Existing Schools                                   | 0                  | 0    | 0    | 0    | 0      |
| Parks  | 0                  | 0    | 0    | 0    | 0      |
| Churches   | 0                  | 0    | 0    | 0    | 0      |
| Cemeteries   | 0                  | 0    | 0    | 0    | 0      |
| Community Facilities                               | 0                  | 0    | 0    | 0    | 0      |
| Known Historic Properties                          | 0                  | 0    | 0    | 0    | 0      |
| Known Archaeological Sites                         | 0                  | 0    | 0    | 1    | 1      |
| Existing Subdivisions                              | 0                  | 0    | 0    | 0    | 0      |
| Proposed Developments                              | 1                  | 0    | 0    | 0    | 1      |
| Section 4(f) Properties                            | 0                  | 0    | 0    | 0    | 0      |

\* Trout indicates only those streams designated as Public Trout Waters. Source: NC Wildlife Resources Commission



### **III. IMPROVEMENT A MAIN STREET IN WILKESBORO**

#### **Existing and Projected Conditions**

Main Street in Wilkesboro (see **Fig. 3**) has an average width of 36 feet with one lane in each direction and left turn bays. It is designated as combined Highways NC 18 and NC 268 and currently carries about 15,000 cars per day. The projected traffic for the design year 2020 is 20,000 cars per day. To maintain a level of service D, the current capacity of Main Street is estimated at 11,000 cars per day.

The most significant travel pattern in the planning area is between the southwest and northeast quadrants. The majority of traffic in these directions must use Main Street due to the lack of an alternate competing route.

Because of the high travel demand on this route, an improvement is definitely needed. The existing facility will need to be improved or an alternate route will need to be provided.

#### **Alternative A-1**

##### **Widen and Improve Existing Main Street**

Main Street will have to be significantly improved to handle the traffic that will be placed on it through the design year. In order to carry 20,000 cars a day, the facility would have to provide four 12-foot lanes plus turning bays or a center lane. In effect, five lanes are required. Additional improvements to reduce the side friction (parking and driveways) would also be beneficial.

The existing parking on Main Street would have to be removed and the pavement would have to be widened to provide four travel lanes plus a turning lane. This would affect several businesses and houses fronting the road (the recommended right-of-way for a five lane urban section is 90 feet).

#### **Decision to Reject**

Alternative A-1 was rejected as a thoroughfare plan corridor. The decision to reject was based on the significant negative disruption to Downtown Wilkesboro. This disruption is detailed in the Environmental Concerns section.



## **Environmental Concerns**

### **Relocation of Residences and Businesses**

This alternative would result in the estimated relocation of 6 residences. The relocation assistance program offered by the Division of Highways is detailed in **Appendix C**.

This alternative would also result in the estimated relocation of 15 businesses.

### **Cultural Resources**

Two churches would be adversely affected by this corridor. The Wilkesboro Baptist Church and the Wilkesboro United Methodist Church would both be impacted by widening Main Street.

### **Historic Properties**

There are seven known Historic properties that would be impacted by this project (see **Fig. 7**). One is currently on the National Register and the other six have been nominated. The potentially impacted properties are listed below.

#### **National Register**

1. Wilkes County Courthouse

#### **Nominated**

1. Former Federal Building
2. Wilkesboro Presbyterian Church
3. Johnson-Hubbard House
4. J.T. Ferguson Store
5. Wilkesboro Smithey Hotel
6. Brown-Cowles House & Cowles Law Office

### **Alternative A-2**

#### **1975 Thoroughfare Plan Corridor**

This alternative is the 1975 adopted thoroughfare plan corridor. It provides an alternate route to Main Street in Wilkesboro (see **Fig. 3**). This proposed two-lane, two-way route is located just south of and parallel to Main Street in the Cub Creek floodplain. It runs to the west from NC 18 (Cherry St) and terminates at SR 2510 east of NC 18-268 (Wilkesboro Blvd).

In recent years the Town has developed the Cub Creek floodplain into a Public Park (see **Fig. 7**). The 1975 Thoroughfare Plan corridor for this improvement is located right in the center of Cub Creek Park.

### **Decision to Reject**

Alternative A-2 was rejected as a Thoroughfare Plan corridor. The decision to reject was based on the significant negative impact to the Cub Creek Park. This disruption is detailed in the Environmental Concerns section.

### **Environmental Concerns**

#### **Relocation of Residences and Businesses**

This alternative would result in the estimated relocation of 7 residences. The relocation assistance program offered by the Division of Highways is detailed in **Appendix C**.

#### **Hydrologic Crossings**

Alternative A-2 will require two crossings of the Cub Creek due to the meandering creek alignment. Both crossings should be made perpendicular to the creek to minimize disruption. Cub Creek is class "C" waters (see **Appendix C**) The Cub Creek is not designated as public mountain Trout waters.

#### **Natural Systems**

For the scope of this study, natural systems are considered to be undisturbed areas (Biotic Forested) that support vegetative and associated wildlife communities. Alternative A-2 is on new location through the Cub Creek Floodplain. This alternative affects approximately 6 acres of natural systems.

#### **Cultural Resources**

Cub Creek Park is an approximately 10 acre Town Park (see **Fig. 7**) in the Cub Creek Floodplain that includes softball fields and a jogging path. Alternative A-2 would impact the entire park.

## **Proposed Developments**

The County has plans to develop land for new County Offices on Woodland Blvd. This land is west of the Cub Creek Park and would be crossed by alternative A-2.

### **Alternative A-3**

#### **Parallel to Main Street, South of Cub Creek Park Preferred Corridor**

Due to the development of the Cub Creek Park, the only remaining corridor is just south of the park. Alternative A-3 is proposed to be a two-lane, two-way facility connecting Main Street just east of Cherry Street with SR 2510 east of Wilkesboro Boulevard (see **Fig. 3**). This alternative will alleviate congestion on Main Street and provide an alternate route that will avoid disrupting the downtown or the park.

### **Decision to Select**

Alternative A-3 was selected as the preferred corridor. It satisfies the need for improvement by accommodating traffic demand through the design year and minimizes the negative environmental impacts. It serves the same purpose as the Adopted Thoroughfare Plan corridor but avoids disrupting the park by shifting to the south.

The environmental concerns are listed below. Table 2 shows a comparison of the alignments.

### **Environmental Concerns**

#### **Relocation of Residences and Businesses**

This alternative would result in the estimated relocation of 2 residences. The relocation assistance program offered by the Division of Highways is detailed in **Appendix C**.

#### **Hydrologic Crossings**

Alternative A-3 will require two crossings of the Cub Creek due to the meandering alignment of the creek. Both crossings should be made perpendicular to the creek to minimize disruption. Cub Creek is class "C" waters (see **Appendix C**). The Cub Creek is not designated as public mountain Trout waters.



### **Natural Systems**

For the scope of this study, natural systems are considered to be undisturbed areas (Biotic Forested) that support vegetative and associated wildlife communities. Alternative A-3 is entirely on new location. This alternative affects approximately 16 acres of natural systems.

### **Proposed Developments**

The County has plans to develop land for new County Offices on Woodland Blvd. This land is west of the Cub Creek Park and would be crossed by alternative A-3.



TABLE 3

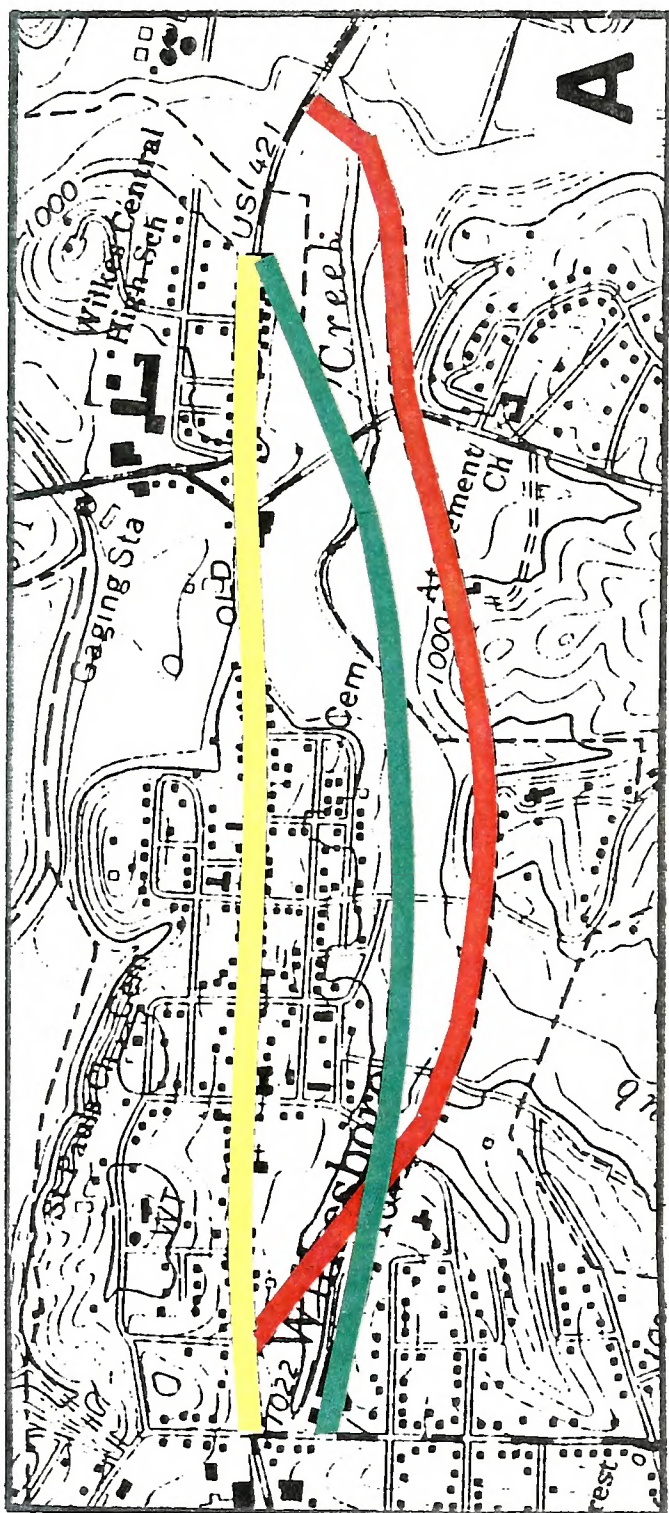
## IMPACTS SUMMARY FOR IMPROVEMENT A: Main Street

| CATEGORY   | CORRIDOR |      |      |
|--|----------|------|------|
|  | A-1      | A-2  | A-3  |
| Length (mi)  | 0.95     | 1.25 | 1.30 |
| Number of Intersections                            | N/A      | 6    | 6    |
| Estimated Relocations:                             |          |      |      |
| Residential  | 6        | 7    | 2    |
| Business   | 15       | 0    | 0    |
| Farms  | 0        | 0    | 0    |
| Miles in Protected Watershed                       | 0        | 0    | 0    |
| Hydrologic Crossings:                              |          |      |      |
| Normal   | 0        | 2    | 2    |
| Trout Waters *                                     | 0        | 0    | 0    |
| Known Hazardous Materials Sites                    | 1        | 0    | 0    |
| Natural Systems:                                   |          |      |      |
| Biotic Forested (acres)                            | 0.0      | 6.0  | 16.4 |
| Wetlands (impacted acres)<br>(derived from survey) | 0.0      | 0.0  | 0.0  |
| Cultural Resources:                                |          |      |      |
| Existing Schools                                   | 0        | 0    | 0    |
| Parks  | 0        | 1    | 0    |
| Churches   | 2        | 0    | 0    |
| Cemeteries   | 0        | 0    | 0    |
| Community Facilities                               | 0        | 0    | 0    |
| Known Historic Properties                          | 7        | 0    | 0    |
| Known Archaeological Sites                         | 0        | 0    | 0    |
| Existing Subdivisions                              | 0        | 0    | 0    |
| Proposed Developments                              | 0        | 1    | 1    |
| Section 4(f) Properties                            | 7        | 1    | 0    |

\* Trout indicates only those streams designated as Public Trout Waters. Source: NC Wildlife Resources Commission







- ALTERNATE 1
- ALTERNATE 2
- ALTERNATE 3



# IMPROVEMENT A

FIGURE 3





#### **IV. IMPROVEMENT B EASTERN LOOP**

##### **Existing and Projected Conditions**

NC 18 from NC 115 to SR 1002 currently carries from 14,000 to 20,000 vehicles per day. The design year projected traffic is as high as 24,000 vehicles per day. NC 18 is a four lane facility between NC 115 and SR 1976. North of SR 1976 it has a short three lane section and then transitions down to a two lane section which continues beyond the planning area boundary. NC 18 is programed in the T.I.P. to be widened (R-2517) between NC 268 and SR 1002. Construction is scheduled to begin in FY 1998.

The existing NC 18 corridor north of NC 115 is heavily developed with no access control. It carries traffic to and from the businesses on NC 268 and is an important link in the significant travel movement between the northeast and southwest quadrants of the Planning Area. Many vehicles "cut through" the residential section of North Wilkesboro to avoid the signals and congestion along NC 18-268.

It has been determined that an alternate route running parallel to NC 18-268 is necessary to accommodate projected growth. The route should connect NC 115, NC 268 and NC 18. This route called the Eastern Loop will alleviate congestion and increase safety on the existing corridor. It will also decrease the cut-through traffic and the need for improvements in North Wilkesboro that would disrupt the residential section. Because there is no combination of existing roads that meet the needs of such an alternate route, alternatives on new location were analyzed.

##### **Alternative B-1**

##### **Eastern Loop Facility Using Existing Section of SR 2335 and Connecting NC 268 and SR 1971 on New Location Preferred Corridor**

Alternative B-1 is almost the same corridor recommended in the 1975 Thoroughfare Plan. It differs slightly in that it does not extend to and include SR 1972. It utilizes a portion of existing SR 2335 and then continues on new location north to SR 1971. The corridor is shown in **Figure 4**. It has a recommended cross section of two twelve foot lanes and its purpose is to alleviate traffic on the NC 18-268 corridor through the design year and provide an alternate route to access the development along NC 268.

## **Decision to Select**

Alternative B-1 was selected as the preferred corridor because it provides an alternate route to the NC 18-268 corridor that will increase travel efficiency and reduce congestion on the corridor, while at the same time, causing the least environmental impacts. The environmental impacts of concern to this alternative are described below.

## **Environmental Concerns**

### **Relocation of Residences and Businesses**

This alternative would result in the estimated relocation of 2 residences. The relocation assistance program offered by the Division of Highways is detailed in **Appendix C**.

This alternative would also result in the estimated relocation of 1 business.

### **Hydrologic Crossings**

Alternative B-1 crosses the Yadkin River approximately 1 mile east of NC 18-268. This crossing will be perpendicular to the River to minimize disruption. This section of the Yadkin River has a "C" classification (see **Appendix C**).

This section of the Yadkin River is not designated as public mountain Trout waters.

This corridor is located to the east of an unnamed tributary of Mulberry Creek to avoid impacting the tributary.

### **Natural Systems**

For the scope of this study, natural systems are considered to be undisturbed areas (Biotic Forested) that support vegetative and associated wildlife communities. Alternative B-1 is on new location from Armory Road (SR 2335) to Fairplains Road (SR 1971). This alternative affects approximately 40 acres of natural systems.

## **Alternative B-2**

### **Corridor on New Location East of Armory Road and Using Existing Section of SR 1971**

This Corridor is parallel to Alternative B-1 and meets the same improvement needs. However, it is on new location east of Armory Road and uses a longer section of existing SR 1971 than Alternative B-1. The corridor is shown in **Figure 4**. Alternative B-2 also extends to SR 1972 as on the 1975 Thoroughfare Plan.

### **Decision to Reject**

Alternative B-2 was rejected primarily because of the terrain that it would have to cross and its impact on streams. Just north of NC 115 this corridor follows a steep downgrade and runs parallel to and within 50 feet of a small unnamed tributary of the Yadkin River. This stream is not classified but it feeds a section of the Yadkin River that is described below along with the other environmental concerns. Alternative B-2 also crosses an unnamed tributary of Mulberry Creek (see **Fig.4**).

### **Environmental Concerns**

#### **Relocation of Residences and Businesses**

This alternative would result in the estimated relocation of 3 residences. The relocation assistance program offered by the Division of Highways is detailed in appendix C.

#### **Hydrologic Crossings**

Alternative B-2 crosses the Yadkin River approximately 0.8 miles east of NC 18-268 (see **Figs.4,7**). This crossing will be perpendicular to the River to minimize disruption. This section of the Yadkin River has a "C" classification (see **Appendix C**).

This section of the Yadkin River is not designated as public mountain Trout waters.

The approximately 0.83 mile section of alternative B-2 from NC 115 to the point where alternatives B-1 and B-2 run concurrently follows a drainage basin. Alternative B-2 runs parallel to a small unnamed tributary of the Yadkin River.



## **Natural Systems**

For the scope of this study, natural systems are considered to be undisturbed areas (Biotic Forested) that support vegetative and associated wildlife communities. Alternative B-2 is on new location from NC 115 to NC 268. This alternative affects approximately 22 acres of natural systems.

## **Cultural Resources**

The extension of corridor B-2 from Fairplains Road to NC 18 would impact the Fairplains Elementary School. The extension (also proposed on the 1975 Thoroughfare Plan) utilizes the existing Fairplains School Road (SR 1972).

TABLE 4

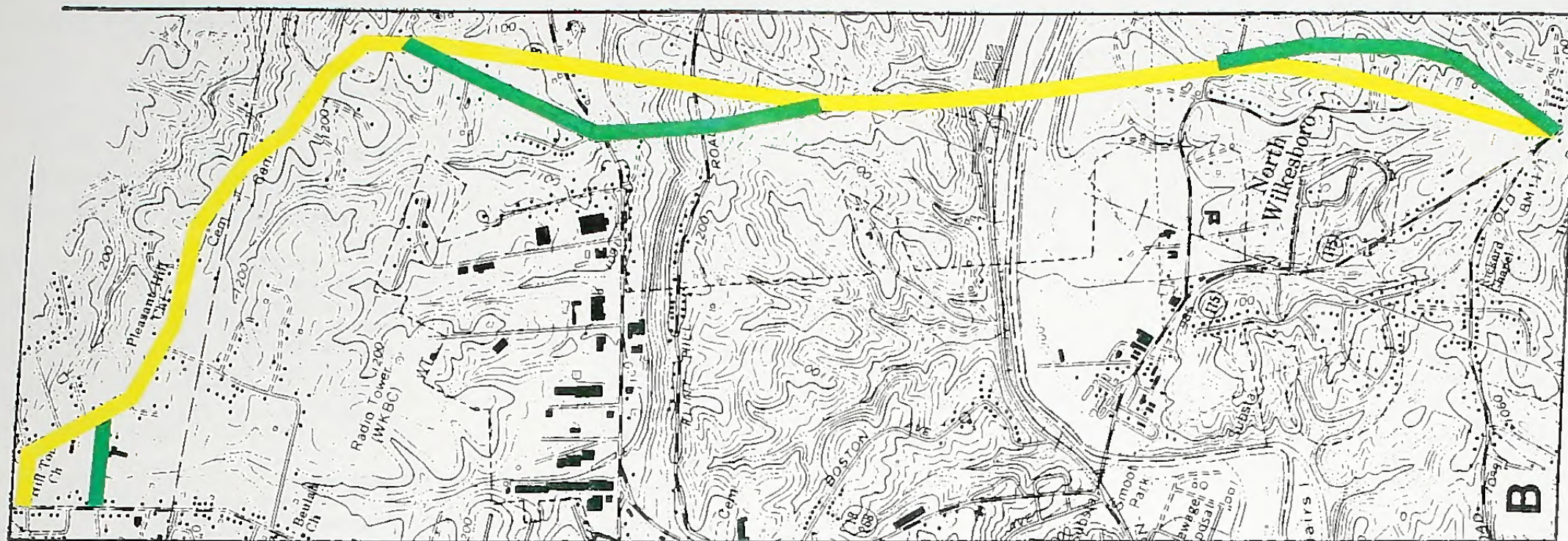
## IMPACTS SUMMARY FOR IMPROVEMENT B: Eastern Loop




| CATEGORY   | CORRIDOR |      |
|--|----------|------|
|  | B-1      | B-2  |
| Length (mi)  | 4.17     | 4.51 |
| Number of Intersections                            | 5        | 4    |
| Estimated Relocations:                             |          |      |
| Residential  | 2        | 2    |
| Business   | 1        | 0    |
| Farms  | 0        | 0    |
| Miles in Protected Watershed                       | 0        | 0    |
| Hydrologic Crossings:                              |          |      |
| Normal   | 1        | 1    |
| Trout Waters *                                     | 0        | 0    |
| Known Hazardous Materials Sites                    | 0        | 0    |
| Natural Systems:                                   |          |      |
| Biotic Forested (acres)                            | 40.0     | 22.7 |
| Wetlands (impacted acres)<br>(derived from survey) | 0.0      | 0.0  |
| Cultural Resources:                                |          |      |
| Existing Schools                                   | 0        | 1    |
| Parks  | 0        | 0    |
| Churches   | 0        | 0    |
| Cemeteries   | 0        | 0    |
| Community Facilities                               | 0        | 0    |
| Known Historic Properties                          | 0        | 0    |
| Known Archaeological Sites                         | 0        | 0    |
| Existing Subdivisions                              | 0        | 0    |
| Proposed Developments                              | 0        | 0    |
| Section 4(f) Properties                            | 0        | 0    |

\* Trout indicates only those streams designated as Public Trout Waters. Source: NC Wildlife Resources Commission







- ALTERNATE 1 
- ALTERNATE 2 
- ALTERNATE 3 

IMPROVEMENT B

FIGURE 4





## **V. IMPROVEMENT C NC 268 Bypass**

### **Existing and Projected Conditions**

Analysis of the existing Wilkesboro-North Wilkesboro road network has established that the most significant travel pattern in the planning area is between the Northeast and Southwest quadrants. The routes that carry this travel pattern are US 421 Business and NC 18-268. Large portions of these two sections are presently experiencing capacity deficiencies and the entire lengths of both sections are projected to be operating over capacity by the design year.

An alternate route is necessary to alleviate these capacity problems and to provide an efficient loop system of travel for the planning area. The NC 268 Bypass recommended in the 1975 Thoroughfare Plan meets these goals and provides continuity to NC 268 around the Downtown areas. Alternative alignments were analyzed for this four lane divided facility which continues west from NC 268 and connects with SR 1372. The NC 268 Bypass is scheduled for right of way protection in the NCDOT Transportation Improvement Program (R-616).

There are two primary criteria for selecting a location for this corridor. The first consideration is that the location should accommodate a right of way sufficient for a four lane divided facility. The second consideration is that the corridor must connect with existing NC 268 where it intersects NC 18 (see **Fig. 2**).

### **Alternative C-1**

#### **NC 268 Bypass Corridor Parallel to and North of SR 1517**

This corridor continues west from NC 18 crossing the Reddies River and connecting with SR 1372. The proposed cross section is four twelve-foot lanes with a median on new location. This corridor is located north of SR 1517 in order to minimize the effects of runoff to Hopper's Branch (see **Fig. 5**). It also avoids impacts to the wetlands located between SR 1517 and the Reddies River (see **Fig. 7**). However, this corridor crosses the south end of the Somerset Golf Course (privately owned).

Alternative C-1 will ease traffic demand on both US 421 Business and NC 18-268. It will allow good system continuity for NC 268 and a north travel loop for the planning area.



## **Decision to Reject**

Alternative C-1 was rejected as the preferred corridor primarily because of its effect on the Somerset Golf Course. The environmental impacts of concern to this alternative are described below.

### **Environmental Concerns**

#### **Relocation of Residences and Businesses**

This alternative would result in the estimated relocation of 13 residences. The relocation assistance program offered by the Division of Highways is detailed in **Appendix C**.

This alternative would also result in the relocation of 6 businesses.

#### **Hydrologic Crossings**

The Reddies River will be impacted by Alternative C-1. The Reddies River is classified as WS-III from its source to the North Wilkesboro Water Supply Dam (see **Appendix C**). The corridor requires one perpendicular crossing of this section of the River (see **Figs. 5, 7**). This section of the Reddies River is not designated as public mountain Trout waters.

Alternative corridor C-1 runs parallel to Hopper's Branch but does not require a crossing. It does, however, require a perpendicular crossing of a tributary of Hopper's Branch. Hopper's Branch is also classified as WS-III.

#### **Natural Systems**

For the scope of this study natural systems are considered to be undisturbed areas (Biotic Forested) that support vegetative and associated wildlife communities. Alternative C-1 is proposed entirely on new location and affects approximately 57 acres of natural systems.

#### **Wetlands**

Wetlands maps are not yet available for the Wilkesboro-North Wilkesboro area. For this evaluation, wetlands locations were approximated from Hydric Soils maps and some critical boundaries were established during a follow-up field investigation and survey. There is an area of wetlands located between SR 1517 and SR 1521 (see **Fig. 7**). Alternative C-1 will impact approximately 1 acre of this wetland area.

There is also a small man-made wetlands area (it was discovered during a field investigation 11-21-92 and is not shown on the hydric soils maps) formed by the berm of a trailer park road, just north of SR 1372. Alternative corridor C-1 will impact approximately 1 acre of this wetland.

During field investigation, an area between SR 1517 and the Reddies River was identified as a potential mitigation site (see **Fig. 7**). Hydric soils mapping indicated this area to have greater wetland potential than actually exists because the area has been ditched and cultivated. Representatives from the Corps of Engineers, the Fish and Wildlife Service, the Wildlife Resources Commission, and the Department of Environmental Management all indicated that this area has high potential as a mitigation site. They stated that it could be converted back to wetlands with relatively low cost and effort.

### **Cultural Resources**

Alternative corridor C-1 crosses the southern portion of the Somerset Golf Course. This is a newly opened, nine hole privately owned golf course that is currently under development.

### **Alternative C-2**

#### **NC 268 Bypass Corridor Using Existing SR 1517**

Alternative C-2 is located to the south of Alternative C-1 and utilizes a section of existing SR 1517 (see **Fig. 5**). It continues on new location west from SR 1517 to SR 1372 and requires one perpendicular crossing of the Reddies River. It has the same cross section (four 12 foot lanes with median) as Alternative C-1. It also serves the same purpose by providing an alternate route to the congested US 421 Business and NC 18-268 corridors. Alternative C-2 avoids the Golf Course but impacts Hopper's Branch and the wetland area between SR 1517 and SR 1521.

### **Decision to Reject**

Alternative C-2 was rejected as the preferred corridor. This corridor impacts the wetlands between SR 1517 and the Reddies River (see figure 7). It was originally chosen as the preferred corridor but was eliminated following the wetlands survey and formulation of alternative C-3. Environmental concerns are described below and quantified in Table 3.

## **Environmental Concerns**

### **Relocation of Residences and Businesses**

This alternative would result in the estimated relocation of 13 residences. The relocation assistance program offered by the Division of Highways is detailed in **Appendix C**.

This alternative would also result in the relocation of 6 businesses.

### **Hydrologic Crossings**

The Reddies River will be impacted by Alternative C-2. The Reddies River is classified as WS-III from its source to the North Wilkesboro Water Supply Dam (see **Appendix C**). The corridor requires one perpendicular crossing of this section of the River (see **Figs. 5, 7**). This section of the Reddies River is not designated as public mountain Trout waters. Alternative C-2 also requires a perpendicular crossing of a tributary of Hopper's Branch. Hopper's Branch also has a WS-III classification.

### **Natural Systems**

For the scope of this study natural systems are considered to be undisturbed areas (Biotic Forested) that support vegetative and associated wildlife communities. Approximately half of the length of Alternative C-2 is on new location. The corridor affects approximately 66 acres of natural systems.

### **Wetlands**

Representatives from the U.S. Army Corps of Engineers, NCDOT Locations and Surveys Unit, NCDOT Hydraulics Unit, NC Wildlife Resources Commission and NCDOT Statewide Planning Branch conducted a wetlands survey on 4-22-93. This survey established the existing wetlands boundary between SR 1517 and the Reddies River (see **Fig. 7**). Alternative C-2 will impact approximately 0.9 acres of this wetland area.

There is also a small man-made wetlands area, formed by the berm of a trailer park road, just north of SR 1372 (see **Fig. 7**). Alternative corridor C-2 will impact approximately 1 acre of this wetland.



During field investigation, the area between SR 1517 and the Reddies River was identified as a potential mitigation site (see **Fig.7**). Hydric soils mapping indicated this area to have greater wetland potential than actually exists because the area has been ditched and cultivated. Representatives from the Corps of Engineers, the Fish and Wildlife Service, the Wildlife Resources Commission, and the Department of Environmental Management all indicated that this area has high potential as a mitigation site. They stated that it could be converted back to wetlands with relatively low cost and effort.

### **Alternative C-3**

#### **NC 268 Bypass Corridor Between C-1 and C-2**

This corridor was formulated after the wetlands area between SR 1517 and the Reddies River was surveyed and its actual boundaries plotted. This alternative is basically a shift in the corridor of C-2. The purpose of the shift is to completely avoid the wetlands and remain south of the golf course.

### **Decision to Select**

Alternative C-3 was selected as the preferred corridor. It avoids both the Golf Course and the wetlands area between SR 1517 and the Reddies River.

The environmental concerns are listed below. Table 5 shows a comparison of the alignments.

### **Environmental Concerns**

#### **Relocation of Residences and Businesses**

This alternative would result in the estimated relocation of 13 residences. The relocation assistance program offered by the Division of Highways is detailed in **Appendix C**.

This alternative would also result in the relocation of 6 businesses.

### **Hydrologic Crossings**

The Reddies River will be impacted by Alternative C-3. The Reddies River is classified as WS-III from its source to the North Wilkesboro Water Supply Dam (see **Appendix C**). The corridor requires one perpendicular crossing of this section of the River (see **Figs.5,7**). This section of the Reddies River is not designated as public mountain Trout waters.

Alternative C-3 requires a perpendicular crossing of a tributary of Hopper's Branch. Hopper's Branch also has a WS-III classification.

### Natural Systems

For the scope of this study natural systems are considered to be undisturbed areas (Biotic Forested) that support vegetative and associated wildlife communities. Alternative C-3 resulted from shifting C-2 to avoid the surveyed wetlands. This shift caused the corridor to utilize less of the cleared area around SR 1517. This corridor affects approximately 81 acres of natural systems.

### Wetlands

There is a small man-made wetlands area, formed by the berm of a trailer park road, just north of SR 1372 (see **Fig. 7**). Alternative corridor C-3 will impact approximately 1 acre of this wetland.

During field investigation, an area between SR 1517 and the Reddies River was identified as a potential mitigation site (see **Fig. 7**). Hydric soils mapping indicated this area to have greater wetland potential than actually exists because the area has been ditched and cultivated. Representatives from the Corps of Engineers, the Fish and Wildlife Service, the Wildlife Resources Commission, and the Department of Environmental Management all indicated that this area has high potential as a mitigation site. They stated that it could be converted back to wetlands with relatively low cost and effort.

**TABLE 5**  
**IMPACTS SUMMARY FOR IMPROVEMENT C: NC 268 Bypass**

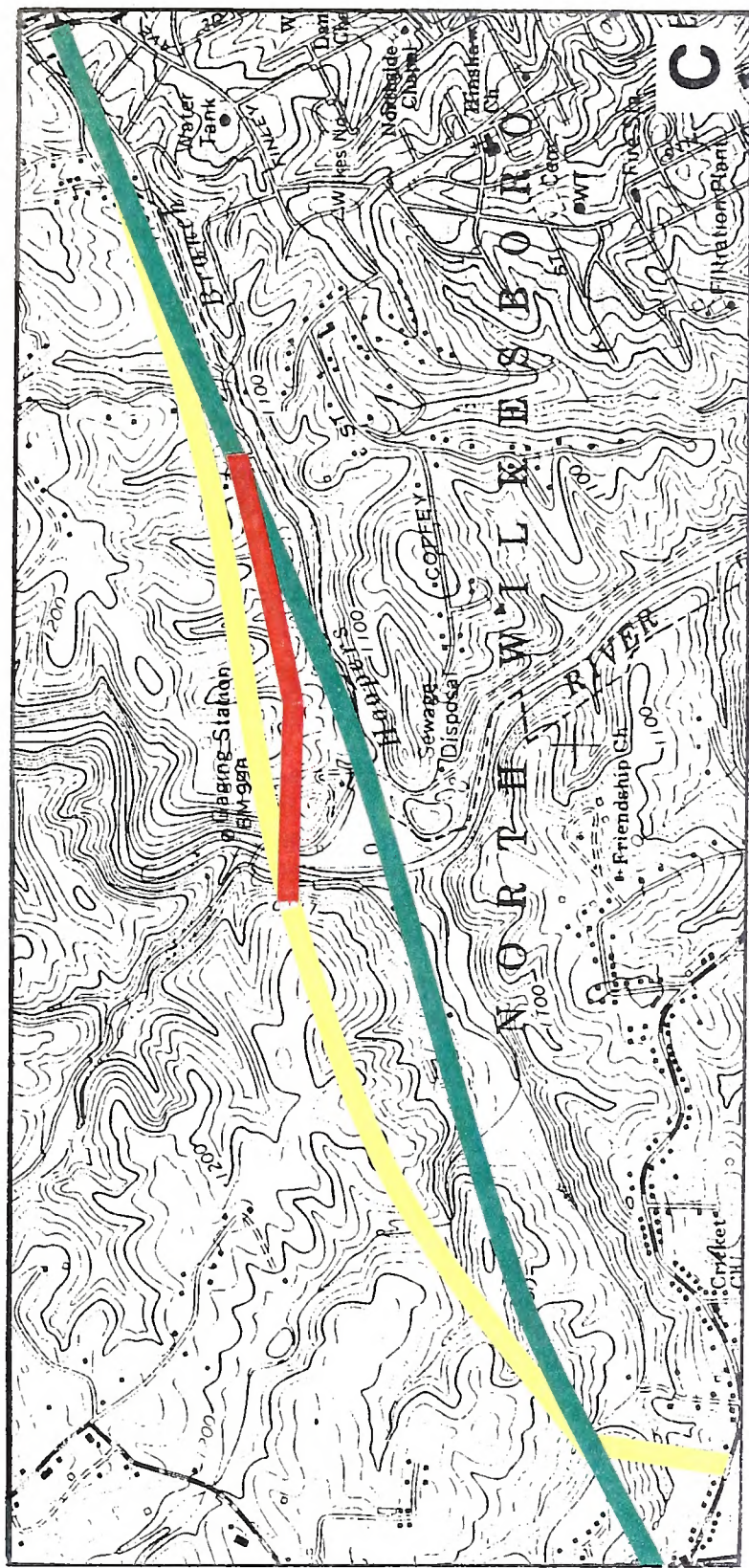
| CATEGORY   | CORRIDOR |      |      |
|--|----------|------|------|
|  | C-1      | C-2  | C-3  |
| Length (mi)  | 2.88     | 2.56 | 2.63 |
| Number of Intersections                            | 5        | 5    | 5    |
| Estimated Relocations:                             |          |      |      |
| Residential  | 13       | 13   | 13   |
| Business   | 6        | 6    | 6    |
| Farms  | 0        | 0    | 0    |
| Miles in Protected Watershed                       | 0        | 0    | 0    |
| Hydrologic Crossings:                              |          |      |      |
| Normal   | 2        | 2    | 2    |
| Trout Waters *                                     | 0        | 0    | 0    |
| Known Hazardous Materials Sites                    | 0        | 0    | 0    |
| Natural Systems:                                   |          |      |      |
| Biotic Forested (acres)                            | 57.8     | 67.4 | 80.7 |
| Wetlands (impacted acres)<br>(derived from survey) | 1.0      | 1.9  | 1.0  |
| Cultural Resources:                                |          |      |      |
| Existing Schools                                   | 0        | 0    | 0    |
| Parks  | 1**      | 0    | 0    |
| Churches   | 0        | 0    | 0    |
| Cemeteries   | 0        | 0    | 0    |
| Community Facilities                               | 0        | 0    | 0    |
| Known Historic Properties                          | 0        | 0    | 0    |
| Known Archaeological Sites                         | 0        | 0    | 0    |
| Existing Subdivisions                              | 0        | 0    | 0    |
| Proposed Developments                              | 0        | 0    | 0    |
| Section 4(f) Properties                            | 0        | 0    | 0    |

\* Trout indicates only those streams designated as Public Trout Waters. Source: NC Wildlife Resources Commission

\*\* The Somerset Golf Course is tabulated as a park, however it is not a section 4(f) property. It is open to the public, but privately owned.







ALTERNATE 1

ALTERNATE 2

ALTERNATE 3



IMPROVEMENT C



FIGURE 5





## **VI. IMPROVEMENT D**

### **NC 268 Bypass Extension & Western Connector**

#### **Existing and Projected Conditions**

The US 421 Business corridor on the west side of Wilkesboro is a major attractor and generator of traffic in the planning area. This corridor is heavily developed with highway retail (fast food restaurants, convenience stores etc.). The Wilkes Mall is also located on this busy section at the intersection of US 421 Business and Curtis Bridge Road (SR 1185). Commercial/retail development is expected to continue and, at the present time, a large site on the south side of US 421 Business is being prepared for a west end shopping center.

This section currently carries about 18,000 vehicles per day and attracts significant traffic from the entire planning area. It is programed for additional through lanes in the TIP (R-2240). Because US 421 Business is the only major facility carrying traffic to this area, additional routes would be beneficial. For increased system efficiency, these routes should connect the US 421 Business Corridor with other major facilities in the planning area.

A system using the major facilities could be attained by extending the NC 268 Bypass to US 421 and providing a Western Connector. The Western Connector would join US 421 with the extended NC 268 Bypass to the North and with NC 268 (West River Road) to the South (see **Fig. 6**). This connector would complete a western loop system for Wilkesboro and North Wilkesboro. It would also alleviate the "bottle-neck" effect currently experienced on US 421 Business due to the major facilities in the planning area funnelling to the West.

The three alternatives for Improvement D have different alignments between SR 1372 and US 421. The traffic projections for this section warrant a four-lane, divided facility. All environmental impacts for this section are based on a 300 foot corridor.

Alternatives D-1, D-2, and D-3 share a common corridor south of US 421 to NC 268 (West River Road). The Traffic projections are lower on this section of the D corridor and can be accomodated by a two-lane section. Therefore, the environmental impacts for this section are based on a 150 foot corridor.

## **Alternative D-1**

### **Improve Existing SR 1320 (Congo Road)**

This alternative would require the significant improvement of SR 1320 (Congo Road). The existing road is only 16 feet wide, has many curves and is lined on both sides with residences. Many of these residences would be affected by the widening and realignment necessary to accommodate the required 4 lanes of traffic.

### **Decision to Reject**

Alternative D-1 was rejected as the preferred corridor because it would have a very significant negative impact on the residences along SR 1322. The widening and improvements to the corridor that would be necessary to transform SR 1320 into the Western Connector would impact a large number of houses. The environmental impacts of concern to this alternative are described below.

### **Environmental Concerns**

#### **Relocation of Residences and Businesses**

This alternative would result in the estimated relocation of 42 residences. The relocation assistance program offered by the Division of Highways is detailed in **Appendix C**.

This alternative would also result in the relocation of 2 businesses.

#### **Hydrologic Crossings**

SR 1320 currently crosses Tucker Hole Creek. The existing structure would have to be improved to accommodate the necessary pavement widening. Improvements would be in the same location as the existing structure. Tucker Hole Creek is classified as a WS-III TR creek (see **Appendix C**). The TR designation means that the creek is suitable for natural trout propagation and maintenance of stocked trout. However, Tucker Hole Creek is not designated as Public Mountain Trout Waters.

The section on new location south of US 421 Business crosses Miller's Creek and the Yadkin River. Miller's Creek holds a "C" classification and the impacted section of the Yadkin River is classified as WS-III (see **Appendix C**).

## **Natural Systems**

For the scope of this study natural systems are considered to be undisturbed areas (Biotic Forested) that support vegetative and associated wildlife communities. Alternative D-1 has a section on new location between US 421 Business and NC 268 (West River Rd). This alternative affects approximately 20 acres of natural systems.

## **Alternative D-2**

### **New Location West of SR 1320 (Congo Road)**

Alternative D-2 is located to the west of SR 1320 and does not utilize any of the existing corridor of SR 1320. It intersects SR 1320, SR 1325, and SR 1322 and continues south on existing SR 1323 (see **Fig. 6**). This alternative crosses Tucker Hole Creek north of US 421 Business. It connects with SR 1323 and shares a common corridor with D-1 and D-3 south to NC 268 (West River Rd).

## **Decision to Select**

Alternative D-2 was selected as the preferred corridor primarily because it minimizes impacts to the residential area along SR 1320 (Congo Road). Environmental concerns are described below and quantified in Table 3.

## **Environmental Concerns**

### **Relocation of Residences and Businesses**

This alternative would result in the estimated relocation of 18 residences. The relocation assistance program offered by the Division of Highways is detailed in **Appendix C**.

This alternative would also result in the relocation of 2 businesses.

## **Hydrologic Crossings**

Tucker Hole Creek will be impacted by Alternative D-2. Tucker Hole Creek is classified as a WS-III TR creek (see **Appendix C**). The TR designation means that the creek is suitable for natural trout propagation and maintenance of stocked trout. However, Tucker Hole Creek is not designated as Public Mountain Trout Waters.



The section on new location south of US 421 Business crosses Miller's Creek and the Yadkin River. Miller's Creek holds a "C" classification and the impacted section of the Yadkin River is classified as WS-III (see **Appendix C**).

### **Natural Systems**

For the scope of this study natural systems are considered to be undisturbed areas (Biotic Forested) that support vegetative and associated wildlife communities. Alternative D-2 is entirely on new location. The corridor affects approximately 44 acres of natural systems.

### **Archaeological Sites**

One archaeological site is in the proximity of alternative D-2. The site is west of SR 1320 (see **Fig.7**).

### **Alternative D-3**

#### **Utilizing Existing Section of SR 1320 (Congo Road)**

Alternative corridor D-3 consist of two sections on new location; one between SR 1372 and SR 1320, and one between SR 1320 and SR 1323. The remainder of the corridor is on existing sections of SR 1320 and SR 1323. This corridor allows the use of portions of an existing facility. However, it provides a better corridor than simply improving existing SR 1320.

### **Decision to Reject**

Alternative D-3 was rejected as the preferred corridor because of its negative impact on the residences along SR 1320. It would also be extremely disruptive if widening to four lanes becomes necessary. The environmental impacts of concern to this alternative are described below.

### **Environmental Concerns**

#### **Relocation of Residences and Businesses**

This alternative would result in the estimated relocation of 24 residences. The relocation assistance program offered by the Division of Highways is detailed in **Appendix C**.

This alternative would also result in the relocation of 2 businesses.

### **Hydrologic Crossings**

Alternative corridor D-3 would require crossing Tucker Hole Creek. Tucker Hole Creek is classified as a WS-III TR creek (see **Appendix C**). Tucker Hole Creek is not designated as Public Mountain Trout Waters.

The section on new location south of US 421 Business crosses Miller's Creek and the Yadkin River. Miller' Creek holds a "C" classification and the impacted section of the Yadkin River is classified as WS-III (see **Appendix C**).

### **Natural Systems**

For the scope of this study natural systems are considered to be undisturbed areas (Biotic Forested) that support vegetative and associated wildlife communities. Alternative D-3 affects approximately 58 acres of natural systems.





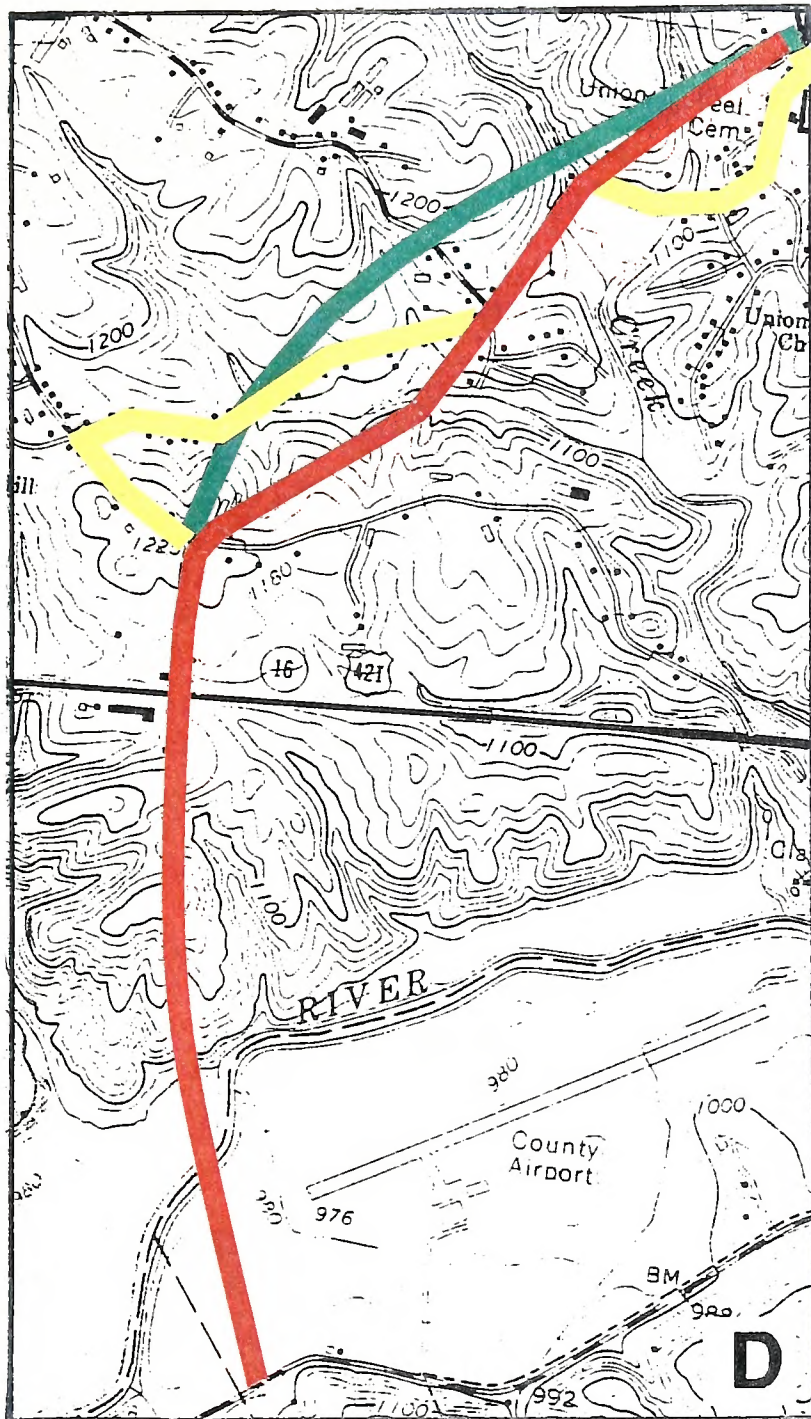
TABLE 6

## IMPACTS SUMMARY FOR IMPROVEMENT D: Western Connector

| CATEGORY   | CORRIDOR |      |      |
|--|----------|------|------|
|  | D-1      | D-2  | D-3  |
| Length (mi)  | 1.53     | 2.31 | 2.26 |
| Number of Intersections                            | N/A      | 5    | 6    |
| Estimated Relocations:                             |          |      |      |
| Residential  | 42       | 18   | 24   |
| Business   | 2        | 2    | 2    |
| Farms  | 0        | 0    | 0    |
| Miles in Protected Watershed                       | 0        | 0    | 0    |
| Hydrologic Crossings:                              |          |      |      |
| Normal   | 2        | 2    | 2    |
| Trout Waters *                                     | 0        | 0    | 0    |
| Known Hazardous Materials Sites                    | 0        | 0    | 0    |
| Natural Systems:                                   |          |      |      |
| Biotic Forested (acres)                            | 20.0     | 44.8 | 58.0 |
| Wetlands (impacted acres)<br>(derived from survey) | 0.0      | 0.0  | 0.0  |
| Cultural Resources:                                |          |      |      |
| Existing Schools                                   | 0        | 0    | 0    |
| Parks  | 0        | 0    | 0    |
| Churches   | 0        | 0    | 0    |
| Cemeteries   | 0        | 0    | 0    |
| Community Facilities                               | 0        | 0    | 0    |
| Known Historic Properties                          | 0        | 0    | 0    |
| Known Archaeological Sites                         | 0        | 1    | 0    |
| Existing Subdivisions                              | 0        | 0    | 0    |
| Proposed Developments                              | 0        | 0    | 0    |
| Section 4(f) Properties                            | 0        | 0    | 0    |

\* Trout indicates only those streams designated as Public Trout Waters. Source: NC Wildlife Resources Commission





ALTERNATE 1  
ALTERNATE 2  
ALTERNATE 3



IMPROVEMENT D

FIGURE 6





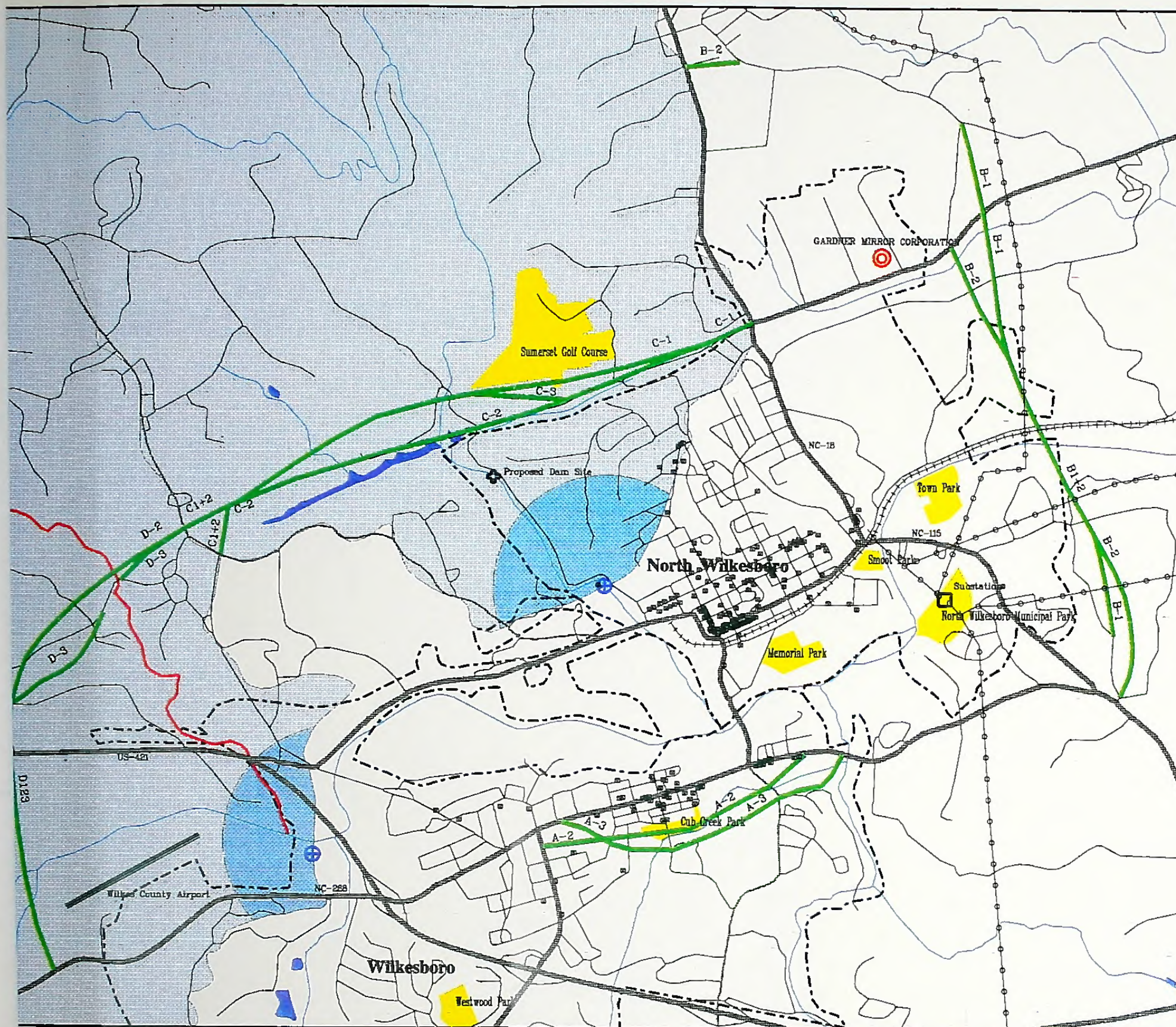




FIGURE 7

CORRIDOR PRESERVATION PILOT PROJECT

Wilkesboro/North Wilkesboro



- Alternative Corridor
- Primary Highway
- Secondary Highway
- Road or Street
- Hydrography
- Trout Stream
- Power/Transmission Line
- Railroad
- Airport/Landing Strip
- - - Municipal Boundary
- Water Supply Watershed
- Water Supply Critical Area (Shading of entire watershed denotes WS-I Classification.)
- Hydric Soil
- Recreation Area
- ⊕ Water Supply Intake
- Historic Site
- ⊙ Superfund Site
- ⊕ Dam Site
- Substation
- ✂ Archaeological sites not shown in compliance with G.S. 70-18

Scale 1:30,000

0 5000 FEET



Map produced December 1993.

N.C. Center for Geographic Information & Analysis  
115 Hillsborough St. • Raleigh, N.C. 27603 • 919-733-2090







**APPENDIX A**  
**ENVIRONMENTAL RESOURCE AGENCY COMMENTS**



Environmental Resource Agency comments received during the corridor preservation pilot project process and included in this document are as follows:

1. United States Army Corps of Engineers
2. North Carolina Wildlife Resources Commission
3. U.S. Fish and Wildlife Service
4. Division of Forest Resources
5. U.S. Environmental Protection Agency
6. N.C. Division of Environmental Management
7. N.C. Department of Cultural Resources
8. NCDOT Environmental Unit
  - Historic Architecture
  - Archaeology
  - Natural Resources/Biology



| AGENCY                               | COMMENTS RECEIVED |    | ALTERNATIVE CORRIDORS<br>(Preferred Corridors in Boldface) |        |                         |        |        |        |        |     |        |     |     |  |
|--------------------------------------|-------------------|----|--|--------|-------------------------|--------|--------|--------|--------|-----|--------|-----|-----|--|
|                                      | YES               | NO | A-1  | A-2    | A-3                     | B-1    | B-2    | C-1    | C-2    | C-3 | D-1    | D-2 | D-3 |  |
| US Army Corps of Engineers           | YES               |    | X  | Y (19) | Y (20)                  | Y (28) | Z (29) | Y (36) | Y (38) | *   | X      | X   | X   |  |
| NC Wildlife Resources Commission     | YES               |    | X  | Z (20) | X                       | P      | X      | P      | Z (38) | *   | X      | X   | X   |  |
| US Fish and Wildlife Service         | YES               |    | X  | X      | Y (20)                  | Y (29) | Y (29) | X      | Z (37) | *   | X      | P   | X   |  |
| Division of Forest Resources         | YES               |    | X  | X      | X                       | X      | X      | X      | X      | *   | X      | X   | X   |  |
| Environmental Protection Agency      |                   |    |  |        |                         |        |        |        |        |     |        |     |     |  |
| NC Division of Environmental Mgmt.   | YES               |    | X  | X      | P                       | P      | X      | X      | Z (37) | *   | X      | P   | X   |  |
| NC Dept. of Cultural Resources       | YES               |    | X  | X      | X                       | X      | X      | X      | X      | X   | X      | X   | X   |  |
| NCDOT Environmental - Historic Arch. | YES               |    | Z (18)   | P      | P                       | P      | P      | P      | P      |     | Y (44) | P   | P   |  |
| - Archaeology                        | YES               |    |  |        | See Comments Appendix A |        |        |        |        |     |        |     |     |  |
| - Nat. Res.\Biology                  | YES               |    |  |        | See Comments Appendix A |        |        |        |        |     |        |     |     |  |

P = Agency has no objection to this alternative corridor.

X = Agency has no comments on this alternative corridor.

Y = Agency has concerns about this alternative corridor

(pp) that are addressed on page pp.

Z = Agency has strong opposition to this alternative corridor.





# United States Department of the Interior



FISH AND WILDLIFE SERVICE  
Asheville Field Office  
330 Ridgefield Court  
Asheville, North Carolina 28806

April 8, 1993

Mr. Paul Koch, Project Engineer  
Statewide Planning Branch  
North Carolina Department of Transportation  
P.O. Box 25201  
Raleigh, North Carolina 27611

Dear Mr. Koch:

Subject: Environmental analysis for Wilkesboro/North Wilkesboro Corridor  
Preservation Pilot Project, Wilkes County, North Carolina

In your letter of February 22, 1993, you requested our comments on the subject document. The following comments are provided in accordance with the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661-667e), and Section 7 of the Endangered Species Act, as amended (16 U.S.C. 1531-1543).

## GENERAL COMMENTS

As stated in our November 2, 1992, letter, the U.S. Fish and Wildlife Service (Service) supports the corridor preservation process in theory and believes it offers an opportunity to consolidate input from the resource agencies in the early stages of project planning. However, we would like to take this opportunity to address a few concerns regarding this experimental planning process.

First, the Service recommends caution regarding the integration of corridor planning and the National Environmental Policy Act (NEPA) process. The document states that the purpose of this environmental analysis is "to justify early corridor preservation and eliminate the need for alternatives analysis at the project planning stage" (Page 1, first paragraph). This statement appears to contradict the purpose of the NEPA process, which specifically requires an in-depth analysis of all reasonable alternatives. Indeed, a NEPA document is inherently a decision-making document, and the environmental analysis needs to rigorously explore and objectively evaluate all reasonable alternatives to minimize environmental impacts so that a decision can be made on the alternatives. While it may be appropriate to attempt to narrow the scope of possible alternatives during the corridor-planning process, subsequent detailed analysis should focus on all reasonable alternatives during the NEPA process. The document makes the following statements regarding the

NEPA process: "The result is the selection of one preferred alignment for each recommended improvement. Once the project becomes programmed for funding, more detailed documentation will be completed according to NEPA guidelines." These statements imply that the more detailed analysis will target only the preferred alternatives of each segment of the thoroughfare plan. Please keep in mind that the NEPA process should be used in the decision-making phase, not to justify preselected alternatives.

Secondly, the Service is concerned that the level of input requested from the resource agencies will be no different from what we currently provide on any other Department of Transportation project review through the National Environmental Policy Act (NEPA) planning process. To date, there has been one scoping meeting (July 7, 1992) and one request for comments on the process and a preliminary set of alternatives. The Service hoped that the corridor-planning process would encourage more involvement in the early planning stages and that it would, consequently, result in a more thorough analysis of environmental impacts. However, the level of documentation and analysis in the subject document has caused us some concern that the environmental review process may be shortchanged. A cursory "screening" of natural resource impacts, as suggested by Appendix A, does not increase resource agency confidence in the environmental review process. The Service assumes that a more detailed analysis of alternatives will be forthcoming in the NEPA process. However, the Service encourages your agency to do a more rigorous initial environmental analysis, to include field reviews and data collection on potential environmental impacts. The extra effort taken during the corridor-planning process would facilitate a more expedient review by resource agencies during the NEPA process. Following are a few specific comments regarding the proposed Wilkesboro/North Wilkesboro thoroughfare improvements:

#### SPECIFIC COMMENTS

Page 2. "Do Nothing" Alternative: This alternative does not necessarily have to be considered in the environmental review process, especially if this alternative clearly does not meet the project need.

Page 3. Environmental Resource Agency Involvement: Again, the corridor preservation planning process has not resulted in the level of involvement that we believe is necessary to achieve the stated "benefits" (fewer environmental impacts, lower costs, increased confidence by resource agencies and the public). We found the statement that "the resource agencies were involved in the early stages of thoroughfare planning and participated from the problem identification phase through to the selection of the preferred alignments" to be somewhat misleading. We did provide comments on the process and preliminary alternatives; however, we did not have input as to the selection of alternatives, which this statement implies.



Page 5, Graphic Aids: In our opinion, the use of GIS in this planning process has not yet reached its full potential. We agree that GIS mapping "is useful because it displays several layers of known environmental data on a base map." We think that GIS maps with all pertinent data layers (including natural heritage elements, vegetative communities, hydric soils, trout streams, etc.) would be most helpful during the alternatives (alignment) selection phase. The map provided in the document (Figure 7) seems to be more of an aside and is not even referenced in the text.

Page 15, Table 2: If 7.6 wetland acres will be impacted under alignment C-2, how can the total wetland acres impacted for all four segments be only 3.3 acres? How was this figure derived?

Page 20, Environmental Concerns: We do not object to the selection of Alternative A-3 as the preferred alternative among those considered, because it minimizes direct impacts to the designated municipal park and greenway along Cub Creek.

However, we believe there still may be other alternatives available for minimizing impacts to Cub Creek and its floodplain. Were alternatives north of Main Street considered? Why are two crossings needed, as opposed to one, for Cub Creek?

Page 29, Decision to Reject: The Service does not object to the selection of Alternative B-1 as the preferred alternative for this segment of the thoroughfare plan. However, impacts to streams associated with Alternative B-2 were not adequately described in the environmental concerns section. It states that "Alternative B-2 was rejected primarily because of the terrain that it would have to cross and its impacts on streams." What specifically are those impacts? Is it feasible to shift the alignment to avoid these impacts?

Page 31, Table 4: Under "Biotic Communities," impacts to forested, nonforested, and aquatic systems are reported. However, in the text, under "Environmental Concerns," only the impacts to forested systems are reported. Are these three systems treated differently?

Page 37, Decision to Select: The Service does not support selection of the preferred alternative under Improvement C (i.e., Alternative C-2) because of unacceptable wetland impacts. The following statement, referring to the selection of Alternative C-2, is very discouraging: "This alignment impacts a larger quantity of wetlands than C-1 but was selected because it avoids impacting the Golf Course." Indeed, a minor shift in the alignment of C-1 to the south would both avoid the golf course and result in fewer wetland acres lost. We encourage reconsideration of available alternatives for this segment. Be advised that the Service will recommend denial for

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any permit application submitted that involves wetland losses where alternatives exist for avoiding such areas.

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Page 38, Hydrologic Crossings: Does a "transverse" crossing mean that it will not necessarily be perpendicular to the river? If so, will this result in additional impacts to the Reddies River? It would be helpful to include information on potential impacts resulting from hydrological crossings in the analysis.

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Page 38, Natural Systems: Again, we are not sure why the total acreage of impacts to natural systems is included in the table but is not included in the text under "Environmental Concerns."

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Page 45, Alternative D-2: The Service has no objection to the selection of the preferred alignment.

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Page 49, Table 6: Keep in mind that impacts to wetlands and natural systems should not be done by acreage figures alone. For example, Alternative D-1 impacts 98.6 acres and Alternative D-2 impacts 81.2 acres, while Alternative D-3 impacts 90.0 acres. What is the difference in habitat value lost? The Service believes that it would be helpful to ground-truth these areas in order to collect more useful information on wildlife habitat values.

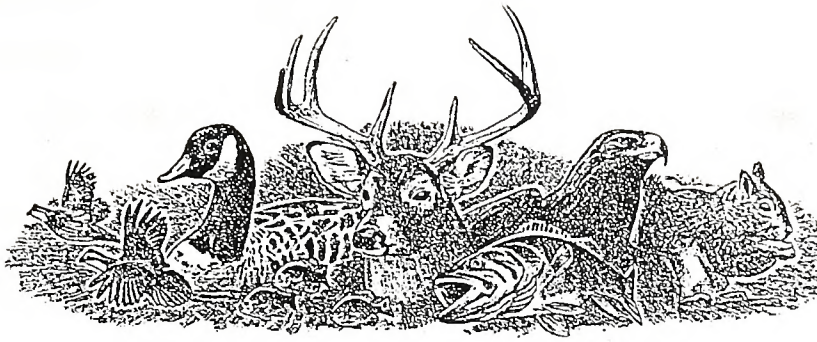
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#### SUMMARY COMMENTS

The Service maintains that the corridor-planning process has tremendous potential for more interaction and exchange between the resource agencies and the Department of Transportation and could provide a more expedient forum in which to explore alternatives and their associated environmental impacts. However, we believe that more effort on the environmental analysis is necessary in order to meet our expectations. We encourage that future corridor preservation planning meetings, GIS mapping efforts, evaluations, field visits, etc., be structured to increase the level of resource agency input during the alternatives selection phase.

We would like to offer the following recommendations to increase the effectiveness of the corridor preservation planning process: (1) produce GIS maps depicting all pertinent data layers for each segment of a project (if possible) and distribute them to resource agencies for their review, (2) conduct natural and cultural resources field surveys within the general corridor-planning area to more specifically identify habitat types/vegetation communities (this would assist in determining the need for endangered/threatened species surveys), (3) select possible alternatives for each segment and host a meeting with resource and other pertinent agencies to discuss these and other possible alternatives for evaluation, (4) consider acquisition and preservation of potential mitigation areas within the corridor area for wetland losses associated with any project segment, and (5) prepare and distribute an environmental analysis of the alternatives.





## North Carolina Wildlife Resources Commission

512 N. Salisbury Street, Raleigh, North Carolina 27604-1188, 919-733-3391  
Charles R. Fullwood, Executive Director

### MEMORANDUM

TO: Melba McGee, Planning and Assessment  
Dept. of Environment, Health, & Natural Resources

FROM: Richard B. Hamilton, Assistant Director  
Habitat Conservation Program *Richard B. Hamilton*

DATE: April 1, 1993

SUBJECT: Request for information from the N. C. Department of Transportation (NCDOT) regarding fish and wildlife concerns for the Draft Wilkesboro-North Wilkesboro Corridor Preservation Pilot Project / Environmental Analysis, Wilkes County, North Carolina, SCH Project No. 93-0741.

This memorandum responds to a request from Mr. Paul Koch of the Statewide Planning Branch, NCDOT, for our concerns regarding impacts on fish and wildlife resources resulting from the subject project. The N. C. Wildlife Resources Commission (NCWRC) has reviewed the proposed thoroughfare plan, and our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) (NEPA) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

On July 7, 1992, a meeting was held to discuss proposals to the Wilkesboro-North Wilkesboro Thoroughfare Plan as part of a pilot project for the Corridor Preservation Program. The NCWRC was represented at this meeting by David Yow, Highway Project Coordinator. A field inspection of the proposed corridors was conducted by NCWRC biologists on June 25, 1992. Our recommendations for the five segments of the Thoroughfare Plan were provided in a subsequent memorandum (Dennis Stewart, July 29, 1992). Our comments on the draft document are listed below in a similar format:



12 A. Main Street in Wilkesboro- The NCWRC recommended Alternative A-3 for this segment due to its avoidance of longitudinal encroachment along Cub Creek. We support the NCDOT in recommending this alignment as the preferred alternative. As stated before, the two crossings of Cub Creek should be situated to cross the stream channel perpendicularly in order to minimize channel disturbance.

13 B. Eastern Loop (from Armory Rd. to NC 18)- The NCWRC supports the preferred corridor alternative (Alt. B-1) for this segment, due to its avoidance of stream impacts near the southern terminus. We reiterate that adequate bridging of the Yadkin River channel and adjacent floodplain is recommended, as wildlife passage will be facilitated and fragmentation effects on wildlife populations will be partially alleviated.

C. NC 268 Bypass (from NC 18 to US 421)- In our previous comments, the NCWRC supported the "preferred" alignment (Alt. C-1), which minimizes longitudinal encroachment on stream channels and avoids wetland areas in the vicinity of Reddies River. We explicitly cautioned against further consideration of alternatives involving avoidable wetland loss in the presence of less damaging alternatives, and suggested minor shift of the preferred corridor to resolve conflicts with ongoing development in the study area.

14 Unfortunately, the NCDOT has proposed to reject Alt. C-1 because it "...crosses the southern portion of the Summerset Golf Course...that is currently under development." A map of the golf course and its relation to corridor C-1 (Figure 7) indicates that a very minor shift to the south will avoid the necessity of crossing the facility with corridor C-1. On the other hand, corridor C-2 (now preferred by the NCDOT) involves a threefold increase in wetland loss and extensive longitudinal encroachment on two tributaries of Reddies River. We are discouraged that such justification for alternative selection is being proposed, since this represents little improvement over previous thoroughfare planning deficiencies. As stated in our previous comments, the NCWRC will likely recommend denial of required permits for this segment if less environmentally damaging alternatives exist. The draft document has demonstrated that such alternatives do exist, and prior acquisition of right-of-way will have little

or no influence on the consideration of wetland fill permits by this and other reviewing agencies. The Statewide Planning Branch is encouraged to discuss the difficulty of obtaining such permits with NCDOT's Planning and Environmental staff.

- 15      D. Western Connector (from US 421 to NC 268)- The NCWRC has no objection to the preferred alignment (D-2), as longitudinal encroachment on stream systems is minimized under this option. Recommendations for crossings of the Yadkin River and several small tributaries are similar to those given for the Eastern Loop segment above, with the added comment that channelization of streams in this segment should be minimized or avoided in future project plans.      15

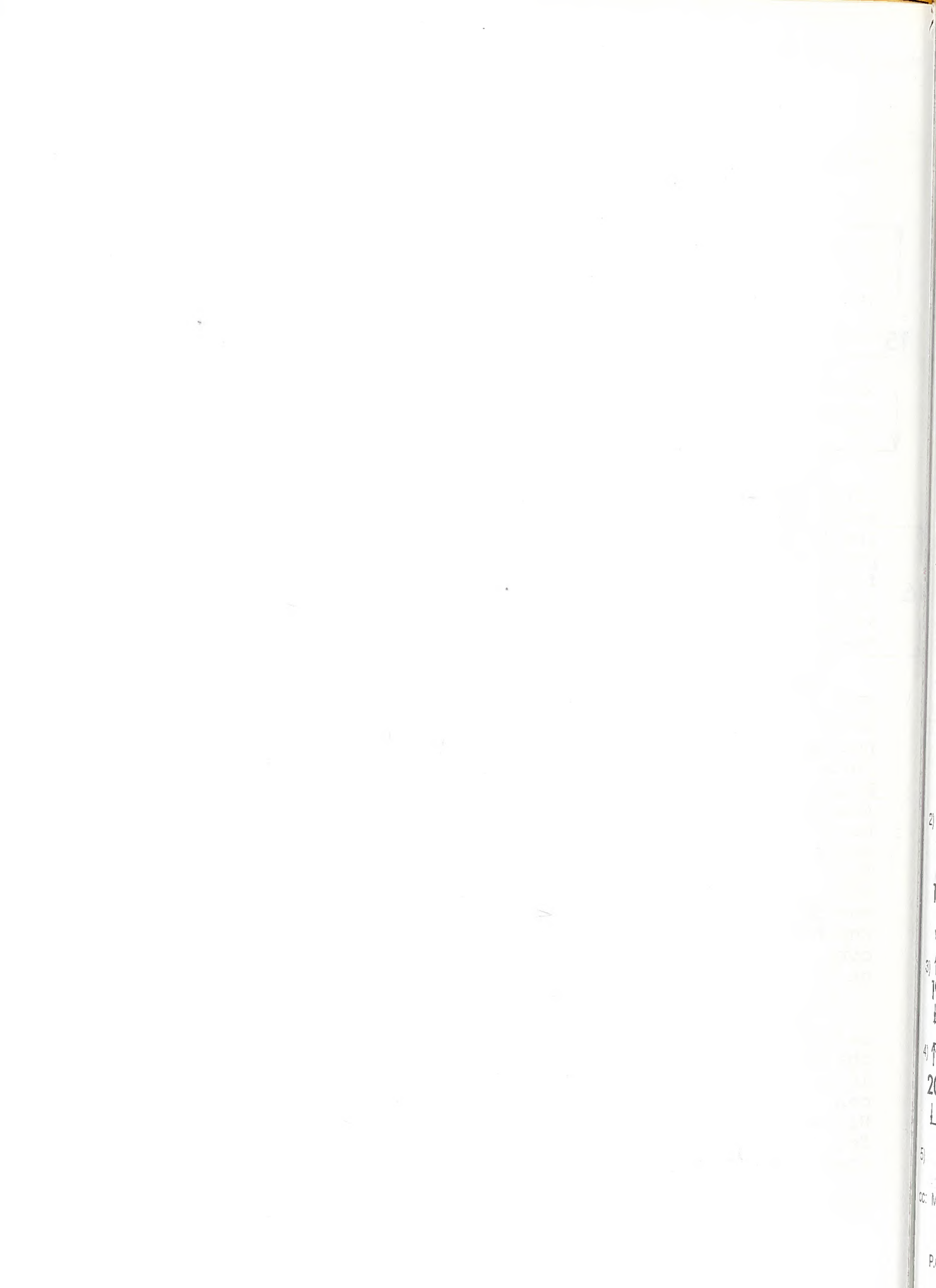
6      Regardless of the which corridor alternatives are ultimately selected, wetland loss will likely be associated with construction on one or more of the proposed segments.

The NCWRC encourages the NCDOT to consider acquisition and preservation of wetland areas in corridors not selected for future highway construction. Preservation of these areas concurrent with proposed highway corridors would help to insure that mitigation opportunities exist for the NCDOT in the project area at the time of highway construction.      16

Finally, we wish to stress that we perceive the Corridor Preservation Pilot Project as an opportunity to avoid future land use conflicts during the NEPA process, and not as an avenue to circumvent the detailed environmental review process presently associated with NEPA documents. Prior to final acceptance of proposed corridors, detailed field surveys of environmental and cultural resources must be conducted within each alternative corridor. Such surveys are the responsibility of the NCDOT and its contractors. The scope and detail of all surveys should be similar to that currently employed in the preparation of the respective environmental document (Environmental Assessment or Environmental Impact Statement). Final NCWRC approval of corridor alternatives will be depend on complete information on fish and wildlife resources within the study area.

We hope that the concerns outlined above can be quickly resolved through interagency cooperation, and we suggest that this project be included on the agenda of the monthly interagency transportation project review meeting. If we can further assist your office, please call David Yow, Highway Project Coordinator, at (919) 528-9887. Thank you for the opportunity to provide input in the early planning stages for this project.

RBH/DLY





State of North Carolina  
Department of Environment,  
Health and Natural Resources  
Division of Environmental Management

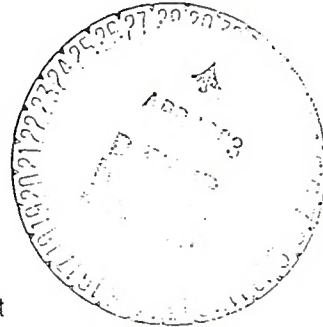
James B. Hunt, Jr., Governor  
Jonathan B. Howes, Secretary  
A. Preston Howard, Jr., P.E., Director

Water Quality Section  
April 29, 1993



MEMORANDUM

To: Melba McGee  
Through: John Dorney *JD*  
From: Eric Galamb *EG*  
Subject: North Wilkesboro-Wilkesboro Corridor Preservation Project  
Wilkes County  
DEHNR # 93-0741, DEM # 8648, COE ID. # 199200572



A site visit was made on April 22, 1993. DEM has reviewed the February 1993 document for the subject project and offers the following comments:

- 1) DEM accepts A-3, B-1, and D-2 as preferred alignments. Alternative C-1 impacts less wetland area but runs parallel to a WS-II Critical Area stream (Hooper's Branch). DOT rejected this alignment because of its effect on a small portion of the Somerset Golf Course. DOT selected Alignment C-2 because it avoids impacting the golf course. Alignment C-2 would result in 3 more residential relocations than C-1. The wetlands in alignment C-2 provide good nutrient and sediment removal, and good water storage. The purpose of the site visit on April 22 was to determine if a "middle" ground for the corridor could be found to prevent longitudinal encroachment of the wetland near the golf course. DEM is uncomfortable accepting C-2 as the preferred alternative due to the important functions that this wetland is providing. DEM requests that a C-3 alignment ("middle ground") be studied that would impact less wetlands and still minimize impacts to the golf course. A map is attached to show the requested alignment. 17
- 2) The document states that once the project is funded and an environmental document is written, decisions regarding mitigation will be made. Since DOT will be acquiring right-of-way as part of the corridor preservation process, wetland mitigation land should also be acquired at the same time. Restoration efforts should be undertaken, if possible, prior to project construction. There was a ditched prior converted wetland west of the proposed impacted wetlands that has potential to be used as mitigation for this project or another in this vicinity (see map). 18
- 3) DEM requests that Hazardous Spill Catch Basins be installed at all water supply stream crossings. Signs directing emergency response personnel to the catch basins should be installed. 19
- 4) DEM is agreeable that this project can proceed with an EA on the preferred segment alignments only if the resource agencies agree that the preferred alternatives are acceptable. If the resource agencies do not agree, then a complete EA/EIS should be written discussing all segment alignments. 20
- 5) All preferred alternatives should be protected by the Roadway Corridor Official Map Act. 21

cc: Monica Swihart

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## North Carolina Department of Cultural Resources

James B. Hunt, Jr., Governor  
Betty Ray McCain, Secretary

Division of Archives and History  
William S. Price, Jr., Director

April 13, 1993

### MEMORANDUM

TO: Paul Koch  
Statewide Planning  
Division of Highways  
North Carolina Department of Transportation

FROM: David Brook *David Brook*  
Deputy State Historic Preservation Officer

SUBJECT: Wilkesboro-North Wilkesboro Preservation Pilot  
Project, Wilkes County, CH 93-E-4220-0741

We have received the draft Environmental Analysis for the above project from the State Clearinghouse and would like to comment.

We understand that a North Carolina Department of Transportation staff architectural historian has conducted a survey of structures located in the study area for each proposed alternative. Please send us the photographs of structures over fifty years of age located along preferred alternatives A-3, B-1, C-2, and D-2.

22

This information will enable us to determine whether any potential National Register-eligible properties are in the study area for the preferred alternatives.

The Archaeological Scoping Evaluation for this project concludes that each of the alternative alignments have potential to affect archaeological resources. We concur with this finding and recommend that a comprehensive survey be conducted once a project alternate has been selected.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act of 1966 and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106, codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

DB:slw

cc: ✓ State Clearinghouse  
B. Church  
T. Padgett









DEPARTMENT OF THE ARMY  
WILMINGTON DISTRICT, CORPS OF ENGINEERS

P.O. BOX 1890  
WILMINGTON, NORTH CAROLINA 28402-1890

IN REPLY REFER TO

April 12, 1993

Regulatory Branch

Action ID 199200572

Mr. Paul Koch  
Statewide Planning  
North Carolina Department  
of Transportation  
Post Office Box 25201  
Raleigh, North Carolina 27611

Dear Mr. Koch:

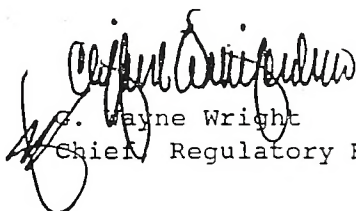
Reference is made to the meeting of November 21 and 22, 1991, concerning the proposed North Wilkesboro-Wilkesboro Thoroughfare Plan held in North Wilkesboro, Wilkes County, North Carolina. Mr. Ken Jolly of my Raleigh Regulatory Field Office attended that meeting, during which you requested comments concerning the concept of "corridor preservation" and specific improvements which could be made to the proposed thoroughfare plan to minimize environmental impacts. A limited field inspection was made on November 22, 1991, to review the proposed project corridor.

We strongly support the corridor preservation concept, provided adequate consideration of alternatives and their associated impacts is accomplished to provide the basis for selection of the specific corridor. As discussed during the meeting, we also believe that you should consider selection and preservation of possible mitigation sites, which offset unavoidable wetland impacts anticipated with the project, during this early stage of consideration. Experience has shown that such mitigation sites are subject to many of the same development pressures as proposed roadway corridors.

In regards to specific information concerning impacts of the proposed North Wilkesboro-Wilkesboro Thoroughfare Plan, we anticipate providing comments after the next meeting, which we understand will include a detailed field review of the proposed corridor. Due to inclement weather, we were unable to conduct such a field review on November 22, 1991.

Mr. John Thomas of our Raleigh Regulatory Field Office is responsible for coordinating projects in Wilkes County, and will be your contact for this proposal. Mr. Thomas can be reached at telephone (919) 846-0648.

Sincerely,

  
G. Wayne Wright  
Chief, Regulatory Branch

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## COMMENTS AND RESPONSES

### U.S. Fish and Wildlife Service:

1) First, the service recommends caution....not to justify preselected alternatives.

**Response:** The purpose of this document is to establish a new procedure consistent with NEPA so that corridors with the least environmental impact can be preserved. The goal is that alternative corridors would only be considered if the potential environmental impacts in the preferred corridor change between the thoroughfare planning and project implementation. For example, new wetlands are identified due to a change in standards/classifications or a new threatened/endangered species is identified in the corridor.

2) We found the statement....which this statement implies.

**Response:** The record of involvement is listed on page 3.

3) The map.....in the text.

**Response:** References to figure 7 are located on pp. 18,19,29, 36,37,38,39,40 .

4) If 7.6 wetland acres....derived?

**Response:** The number mismatch in the draft was due to a typographical error. A wetland survey was conducted on 4-22-93 using the Global Positioning System. This survey yielded a much smaller wetland area than was initially approximated from the hydric soils mapping. Based on this new information a new alignment (alternative C-3) was formulated that avoids the entire wetland area near the Reddies River. The corrected values are in Tables 2 and 5.

5) However, we believe....floodplain. Were alternatives... for Cub Creek.

**Response:** Alternatives north of Main Street were not considered feasible due to the terrain and dense residential development. Two crossings of the Cub Creek are required because of its meandering alignment.

**U.S. Fish and Wildlife Service (cont.):**

- 6) What specifically are those impacts? Is it feasible.... these impacts?

**Response:** The stream impacts for alternative B-2 are described on p. 29.

- 7) Under "Biotic Communities," impacts....systems treated differently?

**Response:** Values for Nonforested and Aquatic systems have been removed from the tables. As discussed in the text, only impacts to the biotic forested areas are considered to be impacts to natural systems.

- 8) The service does not support....avoiding such areas.

**Response:** A wetland survey was conducted by representatives from the U.S. Army Corps of Engineers, NCDOT Locations and Surveys Unit, NCDOT Hydraulics Unit, NC Wildlife Resources Commission, and NCDOT Statewide Planning Branch on 4-22-93 using the Global Positioning System. This survey yielded a much smaller wetland area than was initially approximated from the hydric soils mapping. Based on this new information a new alignment (alternative C-3) was formulated that avoids the entire wetland area near the Reddies River (see Figures 5,7).

- 9) Does a "transverse" crossing....analysis.

**Response:** The terms "transverse" and "perpendicular" were used interchangeably in the draft. The wording has been changed in this document so that only the term "perpendicular" is used to describe stream crossings made at an approximately 90 degree angle.

- 10) Again, we are not sure....Concerns."

**Response:** See response to comment #7.

- 11) Keep in mind that....wildlife habitat values.

**Response:** None required.

**North Carolina Wildlife Resources Commission:**

12) The NCWRC recommended....channel disturbance.

**Response:** None required.

13) The NCWRC supports....be partially alleviated.

**Response:** None required.

14) Unfortunately, the NCDOT has proposed....reviewing agencies.

**Response:** See response to comment #8.

15) The NCWRC has no objection....future project plans.

**Response:** None required.

16) The NCWRC encourages....highway construction.

**Response:** A Potential wetland mitigation site is identified on pp. 37,39,40.



**NCDEHNR Division of Environmental Management, Water Quality Section**

17) DEM is uncomfortable....impacts to the golf course.

**Response:** See response to comments #8.

18) Since DOT will be acquiring....in this vicinity.

**Response:** See response to comments #16.

19) DEM requests....should be installed.

**Response:** None required.

20) DEM is agreeable that....all segment alignments.

**Response:** None required.

21) All preferred....Official Map Act.

**Response:** None required.

**NC Department of Cultural Resources**

22) Please send us the photographs of structures...D-2.

**Response:** Responded in a letter to David Brook, Deputy State Historic Preservation Officer, dated May 26, 1993.

**U.S. Army Corps of Engineers**

23) As discussed during the meeting....possible mitigation sites....stage of consideration.

**Response:** See response to comment #16.

24) In regards to specific information....review of the proposed corridor.

**Response:** See response to comment #8.

APPENDIX B  
PUBLIC COMMENTS





## **PUBLIC COMMENTS**

A public hearing on the recommended thoroughfare plan was held on April 8, 1993. The hearing was advertised by the Towns of Wilkesboro and North Wilkesboro and conducted by their Mayors. Representatives from Statewide Planning presented the alternatives and the thoroughfare plan which consists of the preferred alignments from the Environmental Analysis. After a brief presentation, the floor was opened for public comments. Handouts describing the thoroughfare plan were distributed along with comment sheets. A complete transcript is on file with the NCDOT Statewide Planning Branch. Comments are grouped below by their particular project.

### Improvement A: Main Street in Wilkesboro

- \* Concern expressed about the proximity of the preferred alternative to the Forest Hills subdivision.
- \* Support given to implementing a solution to the existing congestion on Main Street.

### Improvement B: Eastern Loop

- \* No substantive comments.

### Improvement C: NC 268 Bypass

- \* Concern expressed about proximity of the preferred alternative to Hopper's Branch.
- \* Concern expressed about impact to subdivided but undeveloped land.
- \* Support submitted for the NC 268 Bypass because it will alleviate heavy truck traffic on SR 1517.
- \* Concern expressed that implementation of the NC 268 Bypass will increase congestion west of Wilkesboro.

### Improvement D: Western Connector

- \* Concern expressed over potential existence of archaeology in location of Western Connector.
- \* Concern expressed about proximity of alignment to speaker's house.



### **APPENDIX C**

1. General Relocation Assistance Program
2. Water Quality Designations
3. Designated Public Mountain Trout Waters





## Relocation Assistance Program

The Division of Highways offers a Relocation Assistance Program to help minimize the effects of displacement on families and businesses. The Relocation Program will be conducted in accordance with the North Carolina Relocation Assistance Act (GS-133-17). The program is designed to provide assistance to displaced persons on occupying a new place to live or in which to do business. At least one relocation officer is assigned to each highway project for this purpose.

The relocation officer will, at the time right of way is authorized, determine the needs of displaced families, individuals, business concerns, non-profit organizations, and farm operations for relocation advisory services, moving cost compensation, replacement housing payments, mortgage differential, and incidental cost payments. This assistance will be provided without regard to race, color, religion, sex, or national origin. The relocation officer will contact the relocatee within ample time prior to displacement to allow negotiations for and possession of replacement housing which is comparable and meets decent, safe and sanitary standards and is adequate to accommodate the relocatee. Relocation of displaced persons will be made in areas not generally less desirable in regard to public utilities and commercial facilities. Rent and sale prices of replacement housing offered will be within the financial means of the families and individuals displaced. Comparable replacement properties will be made available to the displaced families and individuals in the same general area from which they are being displaced and reasonably accessible to their places of employment. The relocation officer will also assist owners of displaced businesses, non-profit organizations and farm operations in locating and moving to replacement property.

All tenant and owner-occupant displacees will receive an explanation regarding all options available to them, such as (1) purchase of replacement housing, (2) rental of replacement housing, either private or public, or (3) relocating existing owner-occupant housing. The relocation officer will also supply information concerning other State or Federal programs offering assistance to displaced persons and will provide other advisory services as needed in order to minimize hardships to displaced persons in adjusting to a new location. Last resort housing will be provided, if necessary, in accordance with North Carolina law.

The Moving and Replacement Housing Payments Program is designed to (a) compensate the relocatee for the costs of moving from homes, businesses and farm operations acquired for a highway project; (b) provide incidental purchase payments for replacement dwelling such as attorney's fees, prepayment penalty, appraisals, and other closing costs; and

(c) make payment for any increased interest expenses for replacement dwellings. Reimbursement for replacement housing payments, increased interest payments, and incidental purchase expenses may not exceed \$22,500 combined total, unless last resort housing becomes necessary. Tenants may receive a rental assistance payment not to exceed \$5,250, unless last resort housing becomes necessary.

### **Water Quality Classifications**

#### **Fresh Waters**

- Class WS-I: waters protected as water supplies which are in natural and uninhabited or predominantly undeveloped (not urbanized) watersheds; no point source discharges are permitted and local land management programs to control nonpoint source pollution are required; suitable for all Class C uses;
- Class WS-II: waters protected as water supplies which are in low to moderately developed (urbanized) watersheds; discharges are restricted to primarily domestic wastewaters or industrial non-process waters specifically approved by the commission; local land management programs to control nonpoint source pollution are required; suitable for all Class C uses;
- Class WS-III: water supply segment with no categorical restrictions on watershed development or discharges; suitable for all Class C uses;
- Class B: primary recreation and any other usage specified by the "C" classification;
- Class C: fish and wildlife propagation, secondary recreation, agriculture, and other uses requiring waters of lower quality.

#### **Supplemental Classifications**

- Trout Waters: Suitable for natural trout propagation and maintenance of stocked trout;
- Swamp Waters: Waters which have low velocities and other natural characteristics which are different from natural streams;
- NSW: Nutrient sensitive waters which require limitations on nutrient inputs

ORW:

outstanding resource waters which are unique  
and special waters of exceptional state or  
national recreational or ecological  
significance which require special  
protection to maintain existing uses.





## Designated Public Mountain Trout Waters in Wilkes County

| Water               | Miles or Acres | Portion of Water<br>Designated as Public<br>Mountain Trout Water             |
|---------------------|----------------|--|
| Big Sandy Creek     | 3              | Stone Mtn State Park   |
| Garden Creek        | 5              | Stone Mtn State Park   |
| Widow Creek         | 3              | Stone Mtn State Park   |
| Harris Creek        | 5              | Stone Mtn State Park   |
| East Prong          | 9              | Stone Mtn State Park bndry   |
| Roaring River       |                | to Brewer's Mill @ SR 1736   |
| " "                 | 3.5            | Bullhead Crk to Park Bndry   |
| Stone Mtn Creek     | 1              | Alleghany Co. line to<br>Bullhead Creek                                      |
| Middle Prong        | 7              | Headwaters to second bridge  |
| Roaring River       |                | on SR 1736   |
| Harris Creek        | 3              | End of SR 1736 to mouth  |
| Pell Branch Pond    | 1/4 acre       | Entire Pond  |
| Boundary Line Pond  | 1/4 acre       | Entire Pond  |
| Pike Creek          | 2              | Game Land Portion  |
| Pike Creek Pond     | 1/4 acre       | Entire Pond  |
| Middle Fork Reddies | 7              | Headwaters to Bridge on  |
| River               |                | SR 1580  |
| South Fork Reddies  | 7              | Headwaters to NC 16 Bridge   |
| River               |                |  |
| North Fork Reddies  | 10             | Headwaters to Union School   |
| River               |                | Bridge on SR 1559  |
| North Prong Reddies | 3              | Downstream Ford on SR 1569   |
| River               |                | to confluence with North<br>Fork   |
| South Prong         |                |  |
| Lewis Fork          | 10             | Headwaters to Lewis Fork<br>Baptist Church<br>(except no trespass areas)     |
| Fall Creek          | 5              | Entire Stream except<br>portions posted no trespass                          |
| Stony Fork Creek    | 4              | Headwaters to Mt. Zion<br>bridge near intersection<br>of SR 1155 and SR 1167 |

812  
Café  
with  
Hart

Earl  
Rout

2000

Mid  
Rd

R-12  
B-12  
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B-12  
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1100  
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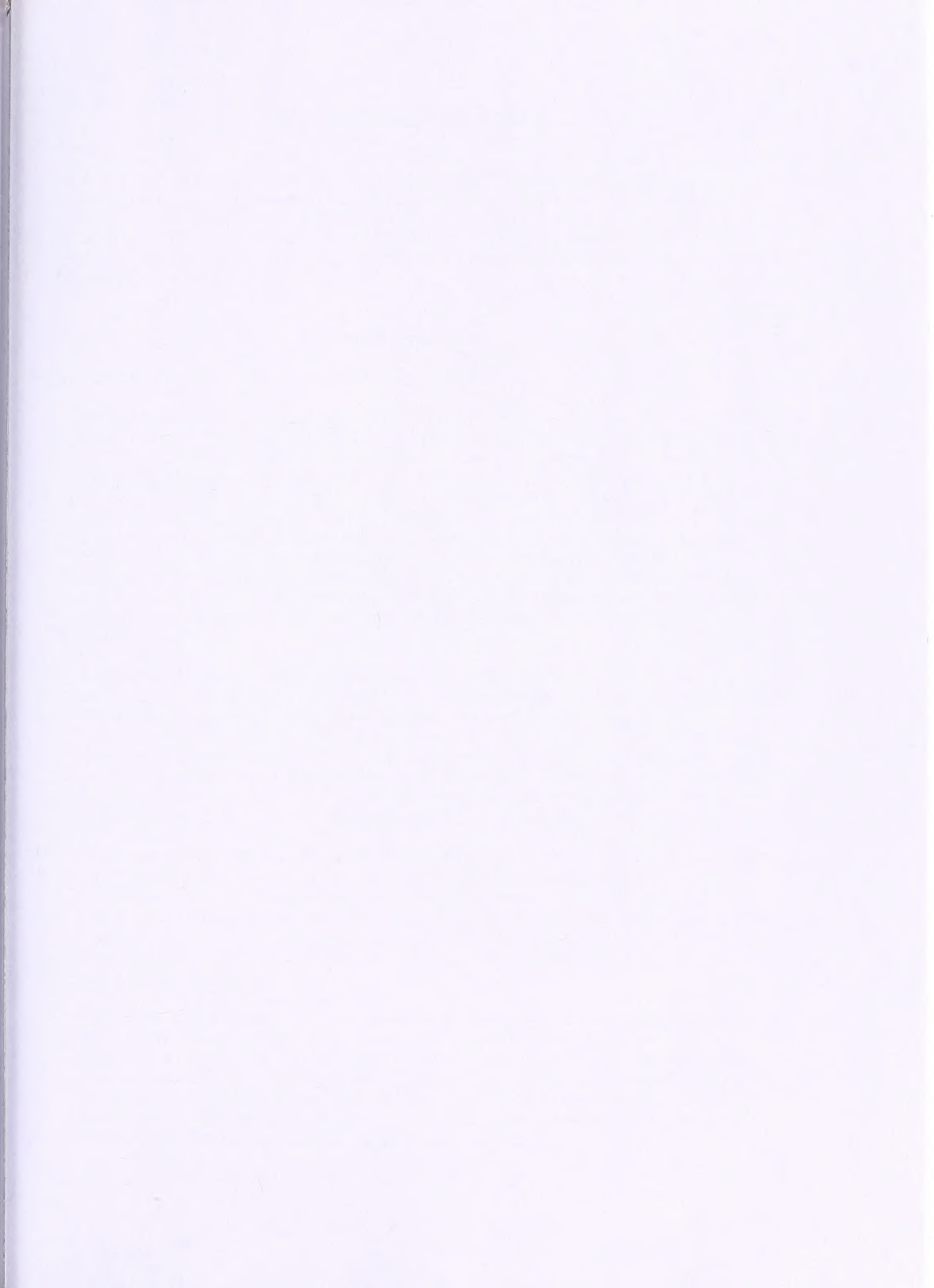
1000  
R-12

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1512

812







## VII. THOROUGHFARE PLAN

A brief discussion of the classified roads in the Wilkesboro-North Wilkesboro Thoroughfare Plan is included in the following section. **Figure 7** shows the 1975 plan and **Figure 8** shows the updated 1993 Thoroughfare Plan. Specific details on physical and operational characteristics are given in **Appendix A Table 7**.

### Recommendations

Major recommended improvements include:

**NC 268 Bypass** - A proposed four-lane facility on mostly new location from the intersection of NC 18 and NC 268 to US 421 west of Wilkesboro. This bypass will ease congestion on NC 18-268 and US 421 Business. It will decrease "cut-through" traffic on North Wilkesboro's residential streets (9th, 10th, Finley, Hinshaw and Trogon Streets) because it allows traffic flow between the north and west segments of the planning area to avoid the downtown area. Partial control of access is recommended. More detail on this alignment is contained under Improvement C in the Environmental Analysis section.

**Eastern Loop** - This proposed two-lane facility uses sections of existing SR 1971 (Fairplains Rd) and SR 2335 (Armory Rd) with the remainder being built on new location. It will relieve congestion on NC 268 east of North Wilkesboro and NC 18 north of North Wilkesboro. It will also provide improved access to industries on NC 268. More detail on this alignment is contained under Improvement B in the Environmental Analysis section.

**Main Street (Wilkesboro) Relocation** - This is a proposed two-lane facility that allows traffic to bypass Main Street. It is recommended that access be controlled with the exception of existing intersections so that the capacity can be maintained. More detail on this road is contained under Improvement A in the Environmental Analysis section.

**Western Connector** - The Western Connector is a proposed two-lane facility that extends south from the NC 268 Bypass at US 421 to NC 268. It will increase access to the western segment of the planning area and complete a loop system for Wilkesboro and North Wilkesboro. More detail on this alignment is contained under Improvement D in the Environmental Analysis section.

**White Pine Street** - This dead-end street currently serves as an industrial drive. Remaining consistent with the 1975 Thoroughfare Plan, an extension of White Pine Street to SR 1971 is recommended. This will increase the choice of routes that access NC 18, NC 268, and the proposed Eastern Loop.

**Cherry Street** - It is recommended that this street be realigned and improved in accordance with the 1987 study by the NCDOT Municipal Traffic Engineering Assistance Program (MTEA) (see **Figure 10**). This recommendation will improve the downtown traffic flow by introducing a more direct route between Wilkesboro Avenue and NC 18/268.

**"D" Street** - This street will be widened to a five-lane curb and gutter section and extended east to Second Avenue (TIP U-2718). It will provide a more direct means of travel through downtown North Wilkesboro and easier access to NC 18/268 and NC 115.

**"A" Street** - An extension of this existing one-way street to 5th Street is recommended. This improvement is consistent with a Traffic Operations Study completed in 1987 by the NCDOT MTEA (See the Cherry Street recommendation, also **Figure 10**).

### **Major Thoroughfares**

Existing major thoroughfares include:

**US 421 Bypass** - Widening and alignment improvements are already scheduled in the Transportation Improvement Program (TIP R-2239 & R-2240) that will improve the level of service for this major carrier of through traffic. These improvements include widening the existing two-lane roadway to four lanes with some alignment improvements.

**NC 18** - North of NC 268, this road is projected to carry over-capacity volumes in the design year. The segment from NC 268 to SR 1002 is programmed to be widened to a multi-lane facility (TIP R-2517). A five-lane section (four travel lanes and one continuous turn lane) is recommended to carry the projected traffic.

**NC 268** - Widening is already scheduled (TIP R-2603) for this highway from NC 18 north of North Wilkesboro to SR 1966 which is past the east limits of the planning boundary. It is recommended that four travel lanes be provided to carry the projected traffic. This will improve traffic flow in the northeast portion of the planning area. It will also help relieve congestion



caused by vehicles entering and exiting the various businesses along this strip.

**Second Avenue** - No changes are recommended for this four-lane section of NC 18/268. The proposed NC 268 Bypass and the Eastern Loop will ease traffic demand along this section.

**NC 115 (US 421 Business)** - Projections show that if the current network remains unchanged this road will exceed capacity in the design year from Mathis Mill Rd (SR 2318) to the northern-most intersection with Armory Rd (SR 2335). This deficiency should be helped by the proposed SR 1971 Loop. It is also recommended that NC 115 be widened to 24 feet from SR 2318 to SR 2335. This will increase safety and driver comfort in addition to improving capacity.

**Main Street (Wilkesboro)** - Main Street currently carries an average of 15,000 vehicles per day (vpd) and its capacity is estimated at 11,000. It has one lane in each direction with left-turn bays at the signalized intersections. Widening of Main Street is not feasible due to the impact on existing businesses and historic structures. A proposed alignment on new location south of Main Street (see Main Street Relocation) will provide an alternate route for the design year traffic of 20,000 vpd.

**SR 1500 (Forrest Avenue)** - The implementation of the NC 268 Bypass provides an alternate route to SR 1500. No improvements are recommended for this facility.

**SR 1372 (Old US 421)** - The existing cross section is sufficient for the design year traffic. No improvements are deemed necessary.

**US 421 Business** - Traffic should grow steadily on the section of this road between US 421 Bypass and the CBD Loop in North Wilkesboro. The addition of a fourth lane to the existing three lane section between Curtis Bridge Road and the West Park shopping center, combined with the NC 268 Bypass will allow this facility to operate at an acceptable level of service.

**SR 1185 (Curtis Bridge Road)** - This two-lane road connects NC 268 and US 421 Business. No improvements are recommended for this major thoroughfare.

**West River Road (NC 268)** - This thoroughfare allows access to the industrial southwest segment of the planning area. Its access will be improved by the proposed segment of the NC 268 Bypass between US 421 and



West River Road (see Western Connector in the Environmental Analysis section). There are no recommended improvements to this segment.

**Wilkesboro Boulevard** - This heavily traveled connector between North Wilkesboro and Wilkesboro is currently being improved by the TIP bridge replacement project B-1432 which will provide five lanes and accommodate the design year traffic.

**SR 2366 (Wilkesboro Avenue)** - This road carries significant traffic volumes between Wilkesboro and North Wilkesboro. The implementation of the proposed NC 268 Bypass will provide an alternate route and help alleviate future traffic. The recommended provision of a center turn lane will increase capacity and safety by preventing turning vehicles from stopping in the traffic stream.

**SR 1001 (Oakwoods Road)** - This is an important thoroughfare between US 421 Bypass and the CBD's of Wilkesboro and North Wilkesboro. It is recommended that this road be widened to 24 feet. This improvement should allow SR 1001 to handle the design year traffic.

**"B" Street** - No improvements are recommended for this existing half of the one-way pair with "A" Street.

**NC 16/18** - NC 16/18 carries traffic between Wilkesboro and the southern planning boundary. Improvements to this section are programed under TIP # R-2207. No additional improvements are recommended.

**Bridge St** - Traffic is well below capacity on this connector between SR 1001 and Main Street in Wilkesboro. Its current width should be adequate in the design year.

**SR 1971 (Fairplains Road)** - This road is a two-lane, 16-foot wide thoroughfare connecting NC 268 and NC 18. It should be widened to 24 feet from NC 18 to SR 1983 when the Eastern Loop is implemented.

**SR 1983** - This road connects SR 1971 with NC 268. No improvements are recommended.

**SR 1322 (Dancy Road)** - SR 1322 travels between US 421 and the western planning boundary. It currently has a 20-foot width. No improvements are recommended.

### **Minor Thoroughfares**

Existing minor thoroughfares include:

**SR 1194 (Old NC 18)** - This road connects residential areas in the southwest portion of the planning area with NC 16-18. No improvements are recommended.

**Woodland Boulevard** - This two-lane connector runs between Main street in Wilkesboro and NC 18. No improvements are recommended.

**Finley Avenue / Hinshaw Street / Sixth Street** - These three streets combine to form a minor thoroughfare between NC 18 and "D" Street. The significant cut-through traffic that is currently using these streets will be reduced by the proposed NC 268 Bypass. North Wilkesboro expressed a desire to discourage traffic through these residential areas and therefore, no additional improvements are recommended.

**Trogdon Street / 9th Street / 10th Street** - This combination of streets forms a minor thoroughfare in North Wilkesboro. The proposed NC 268 Bypass will provide an alternate route for the cut-through traffic that currently uses these streets. No additional improvements are recommended.















# THOROUGHFARE PLAN

## LEGEND

MAJOR THOROUGHFARE  
MINOR THOROUGHFARE

EXISTING  
PROPOSED

## ADOPTED BY:

WILKESBORO JULY 6, 1991  
NORTH WILKESBORO JUNE 8, 1992  
STATEWIDE PLANNING JULY 22, 1993  
N.C. DEPT. OF TRANSPORTATION  
PUBLIC HEARING DATE APRIL 8, 1992

# NORTH WILKESBORO WILKESBORO AND VICINITY WILKES COUNTY NORTH CAROLINA

PREPARED BY THE  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS - PLANNING AND RESEARCH BRANCH  
U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

FIGURE 8







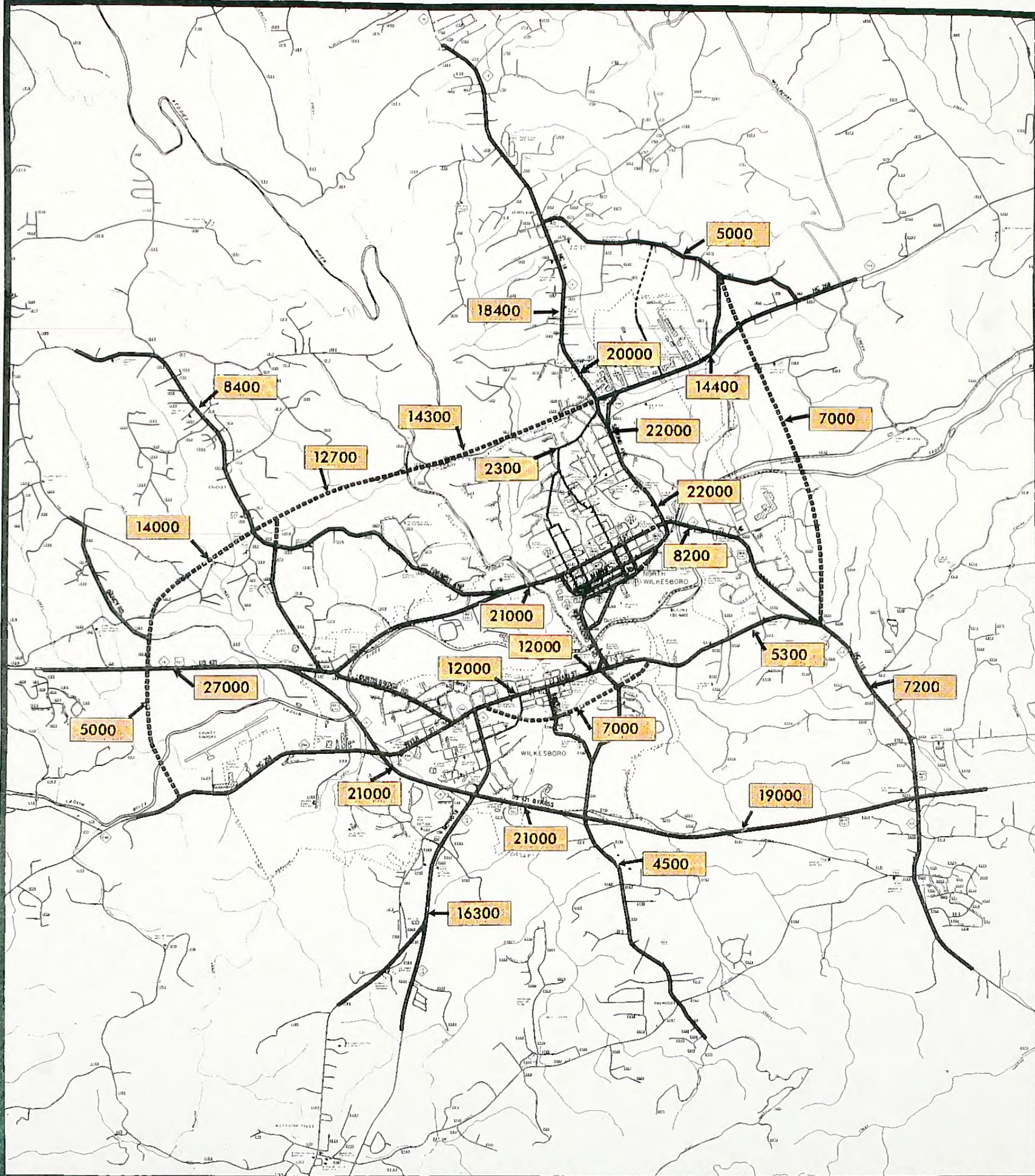


FIGURE 9

LEGEND

MAJOR THOROUGHFARE  
MINOR THOROUGHFARE

EXISTING  
PROPOSED

ADOPTED PLAN WITH PROJECTED TRAFFIC

PROJECTED 2020 TRAFFIC

2020

**NORTH WILKESBORO  
WILKESBORO  
AND VICINITY**  
WILKES COUNTY  
NORTH CAROLINA

Prepared by  
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS - PLANNING AND RESEARCH BRANCH  
in cooperation with the  
U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

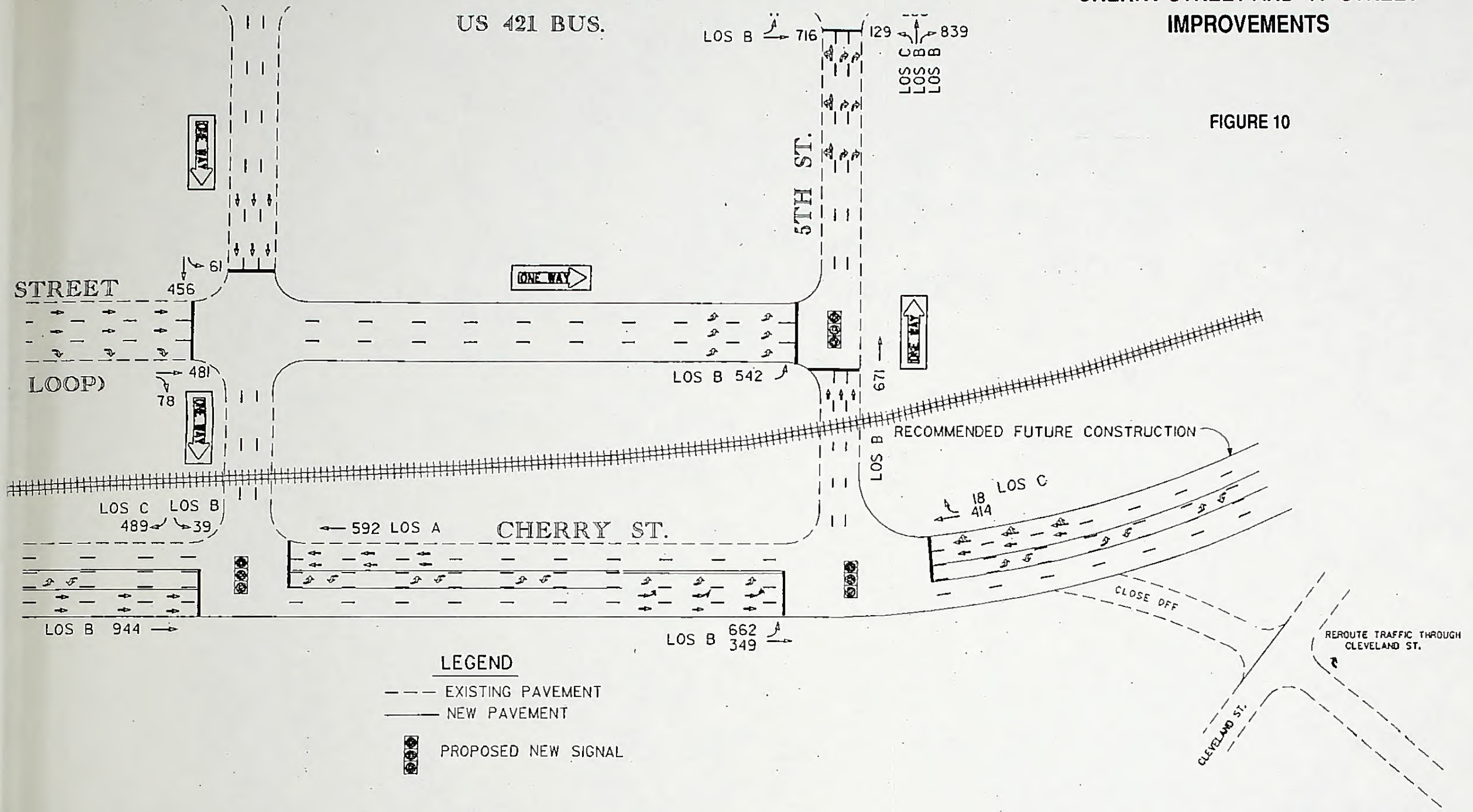
Scale: 1 inch = 1 mile  
North arrow pointing up  
Legend symbols for various road types and features  
Traffic volume labels in yellow boxes  
Map title and project information





CHERRY STREET AND "A" STREET  
IMPROVEMENTS

FIGURE 10







## VIII. CONSTRUCTION PRIORITIES

Construction priorities depend on the potential that proposed projects have to satisfy various objectives. Some of the most important objectives are (1) improvement of the State's arterial system; (2) cost effective improvement of the safety and level-of-service of all roads and highways on the State system; (3) encouragement of economic development; (4) preservation of the environment; and (5) fair and equitable allocation of project funding.

Table 4 summarizes each of the major projects based on its benefits (computed using the Benefits Matrix Model), its estimated right-of-way and construction cost, its probability of stimulating the local economy, and its effect on the environment. This table should be used to establish the priority of each project. Correct prioritization of the projects can result in the implementation of the most beneficial projects, first.

The evaluated projects correspond to the following improvements in the Phase I Environmental Analysis (chapter VI): The NC 268 Bypass includes all of Improvement C and the section of Improvement D from the west terminus of Improvement C to US 421. The Western Connector includes the remainder of Improvement D from US 421 to NC 268. The Eastern Loop includes all of improvement B. Main Street corresponds to Improvement A.

**TABLE 4**  
**BENEFITS EVALUATION**

| Project                     | Benefits<br>(1000's) | Costs<br>(1000's) | Length<br>(Mile) | Benefit<br>Per Mile | Econ.<br>Benefit | Environ.<br>Impact |
|-----------------------------|----------------------|-------------------|------------------|---------------------|------------------|--------------------|
| NC 268<br>Bypass            | 171,087              | 22,581            | 4.02             | 42,559              | + 0.5            | SEE<br>CHAP. VI    |
| Western<br>Connector        | 35,795               | 2,581             | 0.94             | 38,080              | + 0.6            | SEE<br>CHAP. VI    |
| Eastern<br>Loop             | 4,798                | 5,305             | 2.68             | 1,790               | + 0.5            | SEE<br>CHAP. VI    |
| Main Street<br>(Wilkesboro) | 1,112                | 2,103             | 1.21             | 919                 | + 0.3            | SEE<br>CHAP. VI    |

## Cost Estimates

Considerations used to obtain cost estimates for each of the thoroughfare plan projects include: the cross section (the number of lanes, lane widths, shoulders and right-of-way width); the estimated cost of land, residences, and businesses that would have to be bought during the right-of-way aquisition; and the structures required to cross streams, railroad tracks and other roads. Table 5 lists the cost elements for each of the projects.

**TABLE 5  
ELEMENTS FOR ESTIMATING PROJECT COSTS**

| Cost Element                       | NC 268 Bypass | Western Connector | Eastern Loop | Main Street |
|------------------------------------|---------------|-------------------|--------------|-------------|
| Cross Section:<br>(see Fig. 11)    | B             | L                 | L            | L           |
| Right-of-Way:                      |               |                   |              |             |
| Farmland (acres)                   | 1.4           | 6.9               | 6.5          | 8.6         |
| Residences (#)                     | 31            | 0                 | 2            | 2           |
| Businesses (#)                     | 6             | 2                 | 1            | 1           |
| Structures:                        |               |                   |              |             |
| Bridges                            | 1             | 1                 | 1            | 0           |
| Culverts                           | 5             | 1                 | 1            | 2           |
| Estimated Project Cost (\$ 1000's) | 22,581        | 2,581             | 5,305        | 2,103       |

## **IX. IMPLEMENTATION**

There are several methods through which a local government may implement a Thoroughfare Plan. They are as follows:

### **State-Municipal Adoption of the Thoroughfare Plan**

Collectively, the Towns of Wilkesboro, North Wilkesboro and the North Carolina Department of Transportation have responsibility for implementation of the Wilkesboro-North Wilkesboro Thoroughfare Plan. Chapter 136, Article 3A, Section 136-66.2 of the North Carolina General Statutes provides that after development of a thoroughfare plan, the plan may be adopted by the governing body of the municipality and the Board of Transportation as the basis for future street and highway improvements. After mutual adoption, negotiations will begin to determine which of the existing and proposed thoroughfares will be a Department of Transportation responsibility and which will be a municipal responsibility. Facilities which are designated as State responsibility will be constructed and maintained by the Division of Highways; however, the municipality may share in the right-of-way cost. This share of costs will be determined at the time of construction.

In general, the State is responsible for those facilities which will be serving major volumes of through traffic and traffic from outside the area to major commercial, industrial, and institutional areas inside the municipality. Those facilities which will serve primarily internal traffic are to be a municipal responsibility.

After adoption of the thoroughfare plan, a municipality has the legal authority provided by the General Statutes of North Carolina to protect existing and proposed highway corridors through subdivision regulations and future street-line ordinances.

### **Subdivision Controls**

Subdivision regulations require every subdivider to submit to the local planning commission a plan of his proposed subdivision and requires that the subdivision be constructed to certain standards. Through this process, it is possible to require the subdivision streets to conform to the Thoroughfare Plan and to reserve or protect necessary rights-of-way for projected roads and highways that are to become a part of the Thoroughfare Plan. The construction of subdivision streets to adequate standards would reduce maintenance costs and would facilitate the transfer of the streets to the State Highway System. **Appendix B** outlines the recommended design standards.



## Roadway Corridor Official Map

North Carolina General Statutes 136-44.50 through 133-44.53 are collectively designated as the "Roadway Corridor Official Map Act." For cities contemplating the adoption of a Roadway Corridor Map, more commonly referred to as an official street map, there are several things to consider prior to implementation. First and foremost, it should be recognized that an official street map places severe, but temporary, restrictions on private property rights. These restrictions are in the form of a prohibition, for a period of up to three years, for the issuance of building permits or subdivision of property lying within an official street map corridor. This authority should be used carefully and only in cases where less restrictive powers will be ineffective. The SR 1971 Loop is an example of a proposal that could be protected by using an Official Street Map.

The Statute establishing the Official Street Map authority is fairly explicit in outlining the procedures to be followed and the types of projects to be considered. As required by the Statute, a project being considered for an Official Street Map must be programed in the State's Transportation Improvement Program (TIP) or included in a locally adopted capital improvement plan, in addition to appearing on the adopted street system plan. The Statute states that the capital improvement plan must be for a period of ten years or less, and must identify the estimated cost of acquisition and construction of the proposed project as well as the anticipated financing.

The Program and Policy Branch of the North Carolina Department of Transportation is responsible for facilitating the adoption of Official Street Maps. Cities considering Official Street Map projects should contact this Branch for their "Guidelines for Municipalities Considering Adoption of Roadway Corridor Maps" at:

Programming and Policy Branch  
NC Department of Transportation  
P.O. Box 25201  
Raleigh, NC 27611

## Zoning

A zoning ordinance can be beneficial to thoroughfare planning in that planned locations of various land uses and planned densities of dwellings can be realized. This provides a degree of stability on which to make future traffic projections and to plan streets and highways.

Other benefits of a good zoning ordinance are: (1) the establishment of standards of development which will aid traffic operations on major thoroughfares; and (2) minimizing strip commercial development which creates traffic friction and increases the traffic accident potential.

## **Urban Renewal**

Urban renewal is defined as the rehabilitation of downtown areas by demolishing, remodeling, or repairing existing structures in accordance with comprehensive plans. This process allows for corrections to basic problems in the street system layout and design.

To qualify for community development funds or discretionary funds for urban renewal, a city must first prepare a community development program. Urban areas compete throughout the State on the bases of demographic points which consider such conditions as percent of substandard housing, people per square feet of housing, dwelling unit age, etc.

An effort can be made to ensure that community development and transportation plans are compatible.

## **Capital Improvements Program**

One of the tools which makes it easier to build a planned thoroughfare system is a capital improvements program. This is a long range plan for the spending of money on street improvements, acquisition of right-of-way, and other capital improvements within the bounds of projected revenues. Municipal funds should be available for construction of street improvements which are a municipal responsibility, right-of-way cost sharing on facilities designated as Division of Highways responsibility, and advance purchase of right-of-way where such action is required.

The section of the capital improvements program which deals with the thoroughfare plan requires a fairly detailed knowledge of the costs of various projects. This program could be used to benefit any of the improvements listed in this plan.

## **Development Reviews**

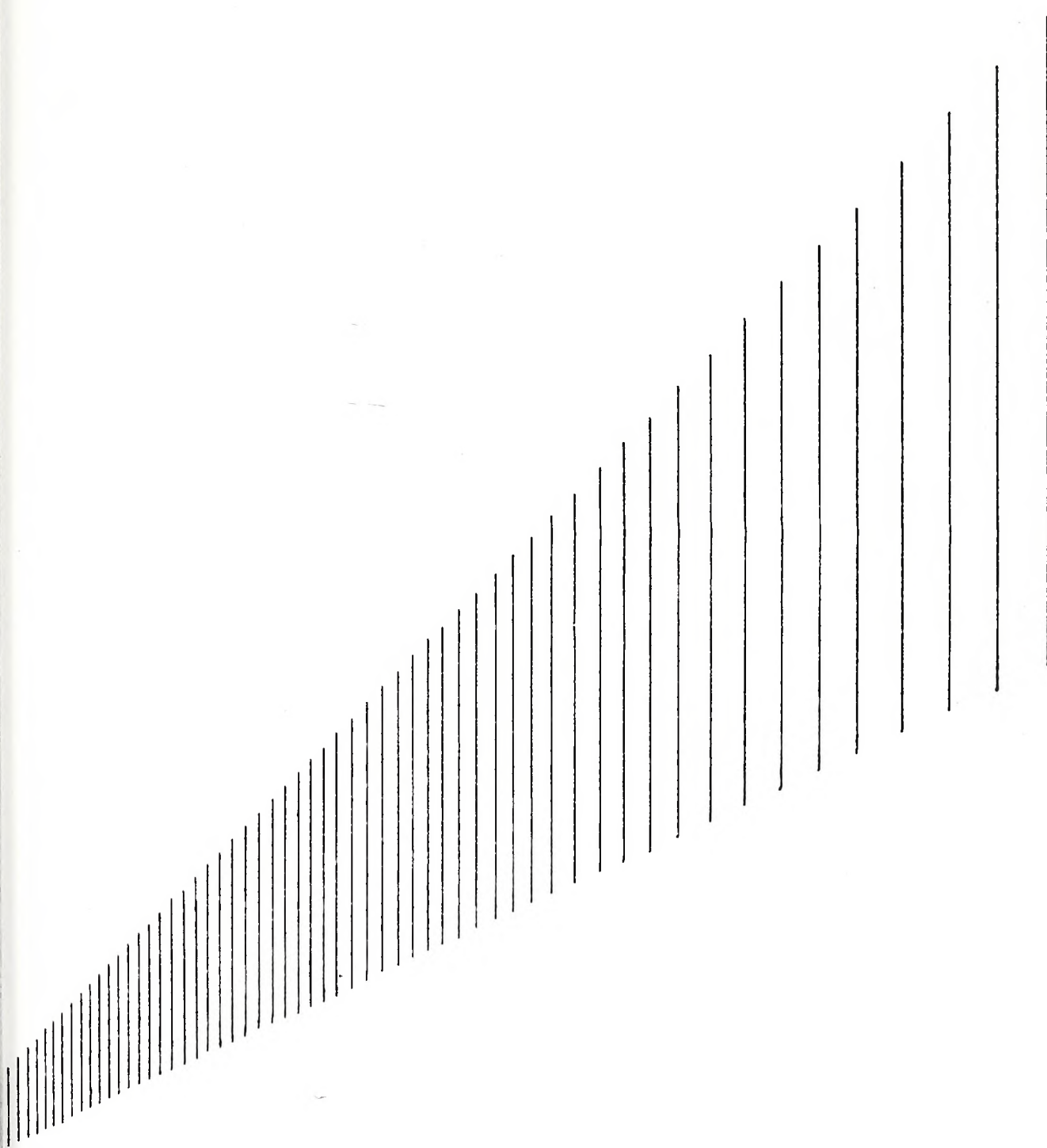
Driveway access to a State-maintained street or highway is reviewed by the District Engineer's office and by the Traffic Engineering Branch of the North Carolina Department of Transportation prior to access being allowed. Any development expected to generate large volumes (i.e. shopping centers, fast food restaurants, large industries, etc.) may be comprehensively studied by staff from the Traffic Engineering, Planning and Research, and Roadway Design Branches of NC DOT. If done at an early stage, it is often possible to significantly improve the development's accessibility at minimal expense. Since the municipality is the first point of contact for developers, it is important that the municipality advise them of this review requirement and cooperate in the review process.

### Other Funding Sources

1. Assess user impact fees to fund transportation projects. These fees, called "facility fees" in the legislation, are to be based upon "reasonable and uniform considerations of capital costs to be incurred by the town as a result of new construction. The facility fee must bear a direct relationship to additional or expanded public capital costs of the community service facilities to be rendered for the inhabitants, occupants of the new construction, or those associated with the development process."
2. Enact a bond issue to fund street improvements.
3. Continue to work with NCDOT to have local projects included in the Transportation Improvement Program(TIP).
4. Consider the possibility of specific projects qualifying for federal demonstration project funds.
5. Adopt a collector street plan that would assess buyer or property owners for street improvement.
6. Charge a special assessment for utilities; for example, increase water and sewer bills to cover cost of street improvements.



# APPENDICES





## APPENDIX A





## APPENDIX A TYPICAL CROSS SECTIONS

Typical cross sections recommended by the Statewide Planning Branch are shown in the following diagrams of **Figure 11**.

**Cross section "A"** is illustrative for controlled access freeways. The 46-foot grassed median is the minimum desirable median width, but there could be some variation from this depending upon design considerations. Slopes of 8:1 into 3-foot drainage ditches are desirable for traffic safety. Right-of-way requirements would typically vary upward from 250 feet depending upon cut and fill requirements.

**Cross section "B"** is typical for four lane divided highways in rural areas which may have only partial or no control of access. The minimum median width for this cross section is 30 feet, but a wider median is desirable. Design requirements for slopes and drainage would be similar to cross section "A", but there may be some variation from this depending upon right-of-way constraints.

**Cross section "C"**, seven lane urban, and **cross section "D"**, five lane urban, are typical for major thoroughfares where frequent left turns are anticipated as a result of abutting development or frequent street intersections.

**Cross sections "E"** and **"F"** are used on major thoroughfares where left turns are anticipated as a result of abutting development or frequent street intersections.

**Cross section "G"** is recommended for urban boulevards or parkways to enhance the urban environment and to improve the compatibility of major thoroughfares with residential areas. A minimum median width of 24 feet is recommended with 30 feet being desirable.

Typical **cross section "H"** is recommended for major thoroughfares where projected travel indicates a need for four travel lanes but traffic is not excessively high, left turning movements are light, and right-of-way is restricted. An additional left turn lane would probably be required at major intersections.

Thoroughfares which are proposed to function as one-way traffic carriers would typically require **cross section "I"**. **Cross section "J"** and **"K"** are usually recommended for minor thoroughfares since these facilities usually serve both land service and traffic service functions. **Cross section "J"** would be used on those minor thoroughfares where parking on both sides is needed as a result of more concentrated development.

**Cross section "L"** is used in rural areas or for staged construction of a wider multi-lane cross section. On some thoroughfares projected traffic volumes may indicate that two travel lanes will adequately serve travel for a considerable period of time.

The curb and gutter urban cross sections all illustrate the sidewalk adjacent to the curb with a buffer or utility strip between the sidewalk and the minimum right-of-way line. This permits adequate setback for utility poles. If it is desired to move the sidewalk further away from the street to provide added separation for pedestrians or for aesthetic reasons, additional right of way must be provided to insure adequate setback for utility poles.

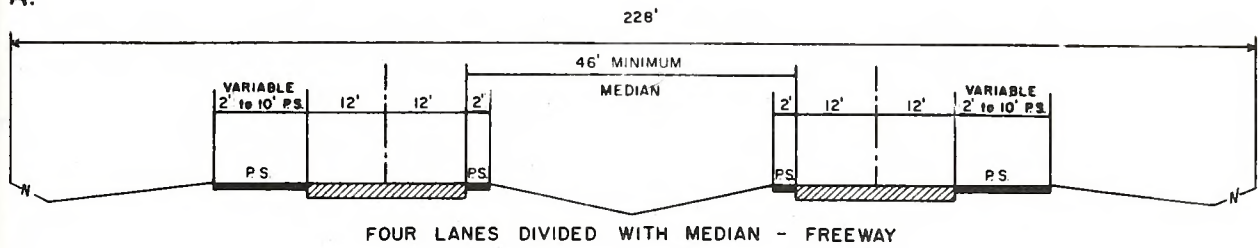
Right of way shown for the typical cross sections are the minimum rights of way required to contain the street, sidewalks, utilities, and drainage facilities. Cut and fill requirements may require either additional right of way or construction easements. Obtaining construction easements is becoming the more common practice for urban thoroughfare construction.

If there is sufficient bicycle traffic along the thoroughfare to justify a bicycle lane or bikeway, additional right of way may be required to allow for the bicycle facilities. The North Carolina Bicycle Facility and Program Handbook should be consulted for design standards for bicycle facilities.

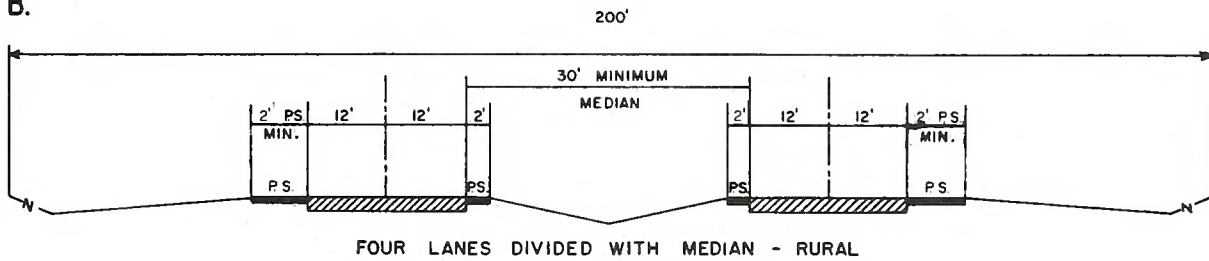
Recommended typical cross sections for thoroughfares were derived on the basis of projected traffic, existing capacities, desirable levels of service, and available right of way.

# TYPICAL THOROUGHFARE CROSS SECTIONS

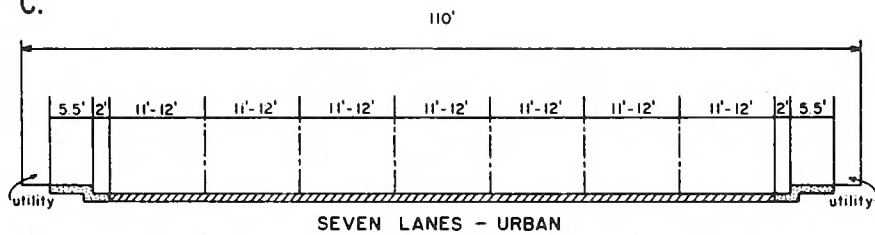
A.



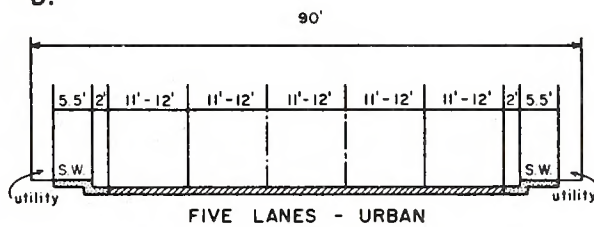
B.



C.



D.



E.

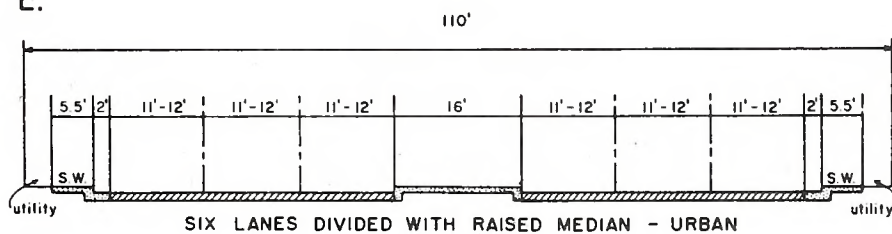
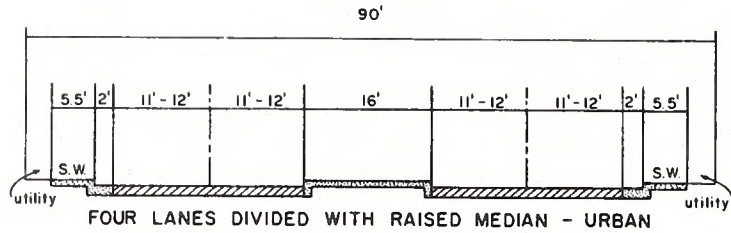


FIGURE 11

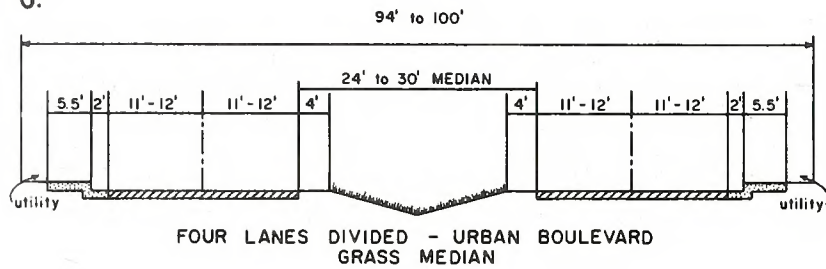


# TYPICAL THOROUGHFARE CROSS SECTIONS (CONTINUED)

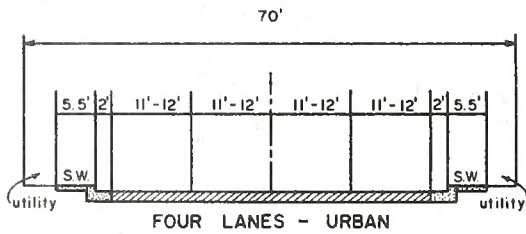
F.



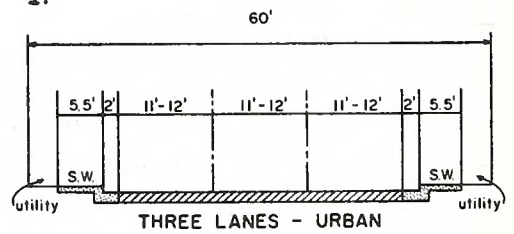
G.



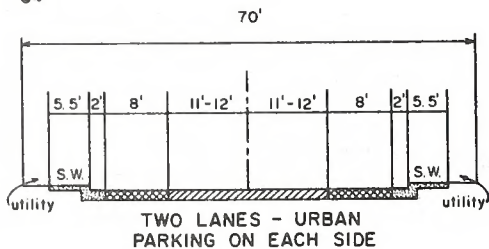
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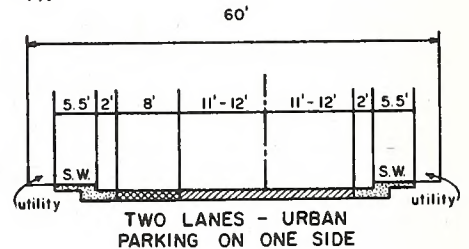
I.



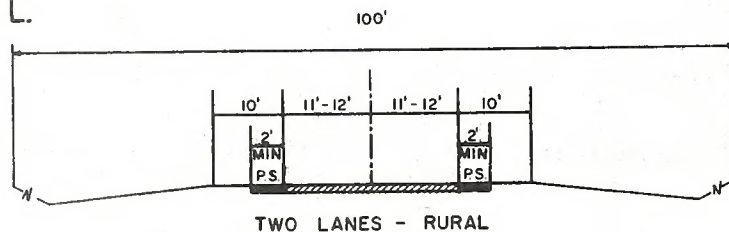
J.



K.



L.



**TABLE 7**  
**THOROUGHFARE PLAN STREET TABULATION AND RECOMMENDATIONS**

| FACILITY & SECTION  | DIST<br>MI | EXISTING<br>X- SECTION |           |          | CAPACITY<br>CURRENT<br>(FUTURE) | 1989<br>ADTS | 2020<br>ADTS | RECOMMENDED<br>X - SECTION |              |
|---|------------|------------------------|-----------|----------|---------------------------------|--------------|--------------|----------------------------|--------------|
|   |            | RDWY<br>FT             | ROW<br>FT | LNS<br># |                                 |              |              | RDWAY<br>(ULT)             | ROW<br>(ULT) |
| <b>NC 268 Bypass</b>  |            |                        |           |          |                                 |              |              |                            |              |
| NC 18 - SR 1372   | 2.68       | --                     | ---       | ---      | (35000)                         | --           | 14300        | B                          | 200          |
| SR 1372 - US 421  | 1.34       | --                     | ---       | ---      | (30000)                         | --           | 14300        | B                          | 200          |
| <b>Eastern Loop</b>   |            |                        |           |          |                                 |              |              |                            |              |
| NC 115 - NC 268   | 2.30       | --                     | ---       | ---      | (13000)                         | --           | 7000         | L                          | 100          |
| NC 268 - SR 1971  | 0.38       | --                     | ---       | ---      | (13000)                         | --           | 5000         | L                          | 100          |
| <b>Main St Relocation</b>   |            |                        |           |          |                                 |              |              |                            |              |
| Main St - SR 2510   | 1.21       | --                     | ---       | ---      | (12000)                         | --           | 7000         | L                          | 100          |
| <b>Western Connector</b>  |            |                        |           |          |                                 |              |              |                            |              |
| US 421 - NC 268   | 0.94       | --                     | ---       | ---      | (12000)                         | --           | 5000         | L                          | 100          |
| <b>White Pine St</b>  |            |                        |           |          |                                 |              |              |                            |              |
| NC 268 - SR 1971  | 1.00       | --                     | ---       | ---      | (10000)                         | --           | 1000         | L                          | 100          |
| <b>Cherry St</b>  |            |                        |           |          |                                 |              |              |                            |              |
| 5th St - Chestnut St  | 0.21       | --                     | ---       | 2        | (12000)                         | --           | 9900         | L                          | ADQ          |
| <b>"D" St</b>   |            |                        |           |          |                                 |              |              |                            |              |
| CBD Loop - 9th St   | 0.17       | 42                     | 60        | 2        | (26000)                         | 5400         | 14000        | D                          | 90           |
| 9th St - NC 18/268  | 0.66       | 24                     | 60        | 2        | (26000)                         | 5400         | 14000        | D                          | 90           |
| <b>"A" St</b>   |            |                        |           |          |                                 |              |              |                            |              |
| CBD Loop - 6th St   | 0.38       | --                     | ---       | 3        | 22000                           | --           | 9000         | NC                         | NC           |
| 6th St - 5th St   | 0.08       | --                     | ---       | ---      | (22000)                         | --           | 9000         | I                          | 60           |
| <b>US 421 Bypass</b>  |            |                        |           |          |                                 |              |              |                            |              |
| East PAB - Cub Creek  | 2.41       | 24                     | 260       | 2        | (27000)                         | 10300        | 19000        | A                          | ADQ          |
| Cub Creek - MP 16.80  | 1.74       | 48                     | 260       | 4        | 27000                           | 14300        | 21000        | NC                         | NC           |
| MP 16.80 - MP 17.67   | 0.87       | 24                     | 260       | 2        | (27000)                         | 14300        | 21000        | A                          | ADQ          |
| MP 17.67 - MP 18.32   | 0.65       | 48                     | 260       | 4        | (30000)                         | 17400        | 27000        | A                          | ADQ          |
| MP 18.32 - SR 1323  | 0.60       | 36                     | 200       | 2        | (35000)                         | 17000        | 27000        | A                          | 228          |
| SR 1323 - West PAB  | 0.27       | 24                     | 200       | 2        | (50000)                         | 17000        | 27000        | A                          | 228          |
| <b>NC 18</b>  |            |                        |           |          |                                 |              |              |                            |              |
| South PAB - MP 13.13  | 1.04       | 24                     | 60        | 2        | 13000                           | 6400         | 8900         | ADQ                        | ADQ          |
| MP 13.13 - MP 14.74   | 1.61       | 48                     | 230       | 4        | 30000                           | 11300        | 16300        | ADQ                        | ADQ          |
| MP 14.74 - Main St  | 0.44       | 24                     | 230       | 2        | 13000                           | 11300        | 12000        | ADQ                        | ADQ          |
| Main St - "A" St  | 0.57       | 22                     | ---       | 2        | *                               | 14000        | 21000        | *                          | *            |
| <b>PAB - PLANNING AREA BOUNDARY</b> <b>ADQ - ADEQUATE</b> <b>MP - MILE POST</b><br><b>NC - NO CHANGE</b> <b>UB - URBAN BOUNDARY</b> |            |                        |           |          |                                 |              |              |                            |              |

\* B-1452 (Bridge Replacement, widening, alignment improvements) currently in progress

**TABLE 7**  
**THOROUGHFARE PLAN STREET TABULATION AND RECOMMENDATIONS**

| FACILITY & SECTION  | DIST<br>MI | EXISTING<br>X- SECTION |           |          | CAPACITY<br>CURRENT<br>(FUTURE) | 1989<br>ADTS | 2020<br>ADTS | RECOMMENDED<br>X - SECTION |              |
|---|------------|------------------------|-----------|----------|---------------------------------|--------------|--------------|----------------------------|--------------|
|   |            | RDWY<br>FT             | ROW<br>FT | LNS<br># |                                 |              |              | RDWAY<br>(ULT)             | ROW<br>(ULT) |
| <b>NC 18 cont.</b>  |            |                        |           |          |                                 |              |              |                            |              |
| "B" St - SR 1525  | 1.19       | 44                     | 60        | 4        | 25000                           | 19300        | 22000        | NC                         | NC           |
| SR 1525 - SR 1517   | 0.23       | 36                     | 60        | 3        | (36000)                         | 20200        | 20000        | D                          | 90           |
| SR 1517 - North PAB   | 1.74       | 24                     | 60        | 2        | (36000)                         | 14000        | 18400        | D                          | 90           |
| <b>NC 268</b>   |            |                        |           |          |                                 |              |              |                            |              |
| West PAB - US 421 Bypass  | 1.89       | 20                     | 100       | 2        | 11000                           | 4600         | 6600         | NC                         | NC           |
| US 421 Bypass - MP 15.84  | 0.52       | 36                     | 100       | 3        | 15000                           | 11000        | 14000        | NC                         | NC           |
| MP 15.84 - NC 18  | 0.26       | 44                     | 100       | 2        | 13000                           | --           | 9300         | NC                         | NC           |
| NC 18 - MP 20.38  | 0.95       | 40                     | 100       | 2        | 27000                           | 18000        | 21000        | NC                         | NC           |
| MP 20.38 - East PAB   | 1.04       | 20                     | 100       | 2        | (28000)                         | 12000        | 14000        | D                          | 90           |
| <b>NC 115 (US 421 Business)</b>   |            |                        |           |          |                                 |              |              |                            |              |
| US 421 Bus - SR 2318  | 1.00       | 20                     | 60        | 2        | (12500)                         | 4000         | 7200         | L                          | NC           |
| SR 2318 - SR 2335   | 1.38       | 20                     | 60        | 2        | (12500)                         | 4000         | 7200         | L                          | NC           |
| SR 2335 - NC 18/268   | 0.49       | 48                     | 60        | 4        | 30000                           | 10800        | 8200         | NC                         | NC           |
| <b>Main St (Wilkesboro)</b>   |            |                        |           |          |                                 |              |              |                            |              |
| NC 268 - Spruce St  | 0.09       | 43                     | ---       | 2        | 13000                           | 15000        | 12000        | NC                         | NC           |
| Spruce St - East St   | 0.55       | 39                     | ---       | 2        | 13000                           | 15000        | 12000        | NC                         | NC           |
| East St - Corporation St  | 0.08       | 36                     | ---       | 2        | 13000                           | 13700        | 12000        | NC                         | NC           |
| Corporation St - SR 2510  | 0.32       | 30                     | ---       | 2        | 13000                           | 13700        | 12000        | NC                         | NC           |
| <b>SR 1500 (Forrest Ave)</b>  |            |                        |           |          |                                 |              |              |                            |              |
| US 421 - MP 0.07  | 0.07       | 20                     | ---       | 2        | 10500                           | 5800         | 4900         | NC                         | NC           |
| MP 0.07 - SR 1372   | 1.87       | 22                     | ---       | 2        | 11500                           | 5800         | 4900         | NC                         | NC           |
| <b>SR 1372 (Old US 421)</b>   |            |                        |           |          |                                 |              |              |                            |              |
| West PAB - US 421   | 2.27       | 22                     | 60        | 2        | 11000                           | 9400         | 10700        | NC                         | NC           |
| <b>US 421 Business</b>  |            |                        |           |          |                                 |              |              |                            |              |
| CBD Loop - 13th St  | 0.13       | 48                     | ---       | 4        | 30000                           | 25500        | 21000        | NC                         | NC           |
| 13th St - SR 1500   | 0.19       | 55                     | ---       | 5        | 35000                           | 25500        | 21000        | NC                         | NC           |
| SR 1500 - West Park   | 0.38       | 48                     | ---       | 4        | 30000                           | 25500        | 21000        | NC                         | NC           |
| West Park - SR 1185   | 0.70       | 36                     | ---       | 3        | (30000)                         | 25500        | 21000        | H                          | 70           |
| <b>SR 1185 (Curtis Bridge Rd)</b>   |            |                        |           |          |                                 |              |              |                            |              |
| NC 268 - US 421 Bus   | 0.92       | 22                     | 60        | 2        | 11500                           | 7200         | 7900         | NC                         | NC           |
| <div> <div>PAB - PLANNING AREA<br/>BOUNDARY</div> <div>ADQ - ADEQUATE<br/>NC - NO CHANGE</div> <div>MP - MILE POST<br/>UB - URBAN BOUNDARY</div> </div> |            |                        |           |          |                                 |              |              |                            |              |



**TABLE 7**  
**THOROUGHFARE PLAN STREET TABULATION AND RECOMMENDATIONS**

| FACILITY & SECTION              | DIST<br>MI | EXISTING<br>X- SECTION |           |          | CAPACITY<br>CURRENT<br>(FUTURE) | 1989<br>ADTS | 2020<br>ADTS | RECOMMENDED<br>X - SECTION |              |
|---------------------------------|------------|------------------------|-----------|----------|---------------------------------|--------------|--------------|----------------------------|--------------|
|                                 |            | RDWY<br>FT             | ROW<br>FT | LNS<br># |                                 |              |              | RDWY<br>(ULT)              | ROW<br>(ULT) |
| <b>SR 1001 (Oakwoods Rd)</b>    |            |                        |           |          |                                 |              |              |                            |              |
| South PAB - US 421 Bypass       | 1.90       | 18                     | ---       | 2        | 9000                            | 4000         | 4600         | NC                         | NC           |
| US 421 Bypass - NC 18/268       | 1.28       | 18                     | ---       | 2        | (12000)                         | 6300         | 9300         | L                          | ADQ          |
| <b>"B" St</b>                   |            |                        |           |          |                                 |              |              |                            |              |
| NC 115 - 6th St                 | 0.51       | 44                     | 60        | 4        | 12000                           | --           |              | NC                         | NC           |
| 6th St - CBD Loop               | 0.38       | 60                     | 80        | 3        | 12000                           | --           |              | NC                         | NC           |
| <b>Bridge St</b>                |            |                        |           |          |                                 |              |              |                            |              |
| Main St - SR 1001               | 0.73       | 20                     | ---       | 2        | 10500                           | 1000         | 1900         | NC                         | NC           |
| <b>SR 1971 (Fairplains Rd)</b>  |            |                        |           |          |                                 |              |              |                            |              |
| NC 18 - NC 268                  | 1.90       | 16                     | ---       | 2        | (12000)                         | 1400         | 5000         | L                          | ADQ          |
| <b>SR 1983</b>                  |            |                        |           |          |                                 |              |              |                            |              |
| SR 1971 - NC 268                | 0.70       | 18                     | ---       | 2        | 9000                            | 600          | 800          | NC                         | NC           |
| <b>SR 1322 (Dancy Rd)</b>       |            |                        |           |          |                                 |              |              |                            |              |
| West PAB - NC 268 Bypass        | 1.06       | 20                     | 60        | 2        | 11000                           | 2200         | 1800         | NC                         | NC           |
| <b>SR 2366 (Wilkesboro Ave)</b> |            |                        |           |          |                                 |              |              |                            |              |
| NC 18 - Cherry St               | 0.38       | 24                     | 60        | 2        | (20000)                         | 14600        | 16000        | I                          | ADQ          |
| <b>SR 1194 (Old NC 18)</b>      |            |                        |           |          |                                 |              |              |                            |              |
| NC 16/18 - Width Change         | 0.30       | 24                     | ---       | 2        | 13000                           | 3300         | 4300         | NC                         | NC           |
| Width Change - South PAB        | 0.51       | 22                     | ---       | 2        | 12000                           | 3300         | 4300         | NC                         | NC           |
| <b>Woodland Blvd</b>            |            |                        |           |          |                                 |              |              |                            |              |
| NC 18 - Main St Rel             | 0.35       | 20                     | ---       | 2        | 9500                            | --           | 4200         | NC                         | NC           |
| Main St Rel - Main St           | 0.16       | 20                     | ---       | 2        | 9500                            | --           | 120          | NC                         | NC           |
| <b>Finley Ave</b>               |            |                        |           |          |                                 |              |              |                            |              |
| NC 18/268 - Hinshaw St          | 0.38       | 20                     | 60        | 2        | 10500                           | 10200        | 2300         | NC                         | NC           |
| <b>Hinshaw St</b>               |            |                        |           |          |                                 |              |              |                            |              |
| Finley St - 6th St              | 0.53       | 28                     | 40        | 2        | 11500                           | --           | 1400         | NC                         | NC           |
| <b>6th St</b>                   |            |                        |           |          |                                 |              |              |                            |              |
| Hinshaw St - "D" St             | 0.36       | 30                     | 60        | 2        | 11500                           | 5200         | 3000         | NC                         | NC           |

PAB - PLANNING AREA  
BOUNDARY

ADQ - ADEQUATE  
NC - NO CHANGE

MP - MILE POST  
UB - URBAN BOUNDARY



**TABLE 7**  
**THOROUGHFARE PLAN STREET TABULATION AND RECOMMENDATIONS**

| FACILITY & SECTION  | DIST<br>MI | EXISTING<br>X- SECTION |           |          | CAPACITY<br>CURRENT<br>(FUTURE) | 1989<br>ADTS | 2020<br>ADTS | RECOMMENDED<br>X - SECTION |              |
|---|------------|------------------------|-----------|----------|---------------------------------|--------------|--------------|----------------------------|--------------|
|   |            | RDWY<br>FT             | ROW<br>FT | LNS<br># |                                 |              |              | RDWAY<br>(ULT)             | ROW<br>(ULT) |
| <b>Trogdon St</b><br>Hinshaw St - "I" St  | 0.44       | 20                     | ---       | 2        | 10000                           | 5600         | 3100         | NC                         | NC           |
| <b>9th St</b><br>"I" St - "D" St  | 0.34       | 20                     | ---       | 2        | 10000                           | 600          | 600          | NC                         | NC           |
| <b>10th St</b><br>"I" St - "D" St   | 0.34       | 20                     | ---       | 2        | 10000                           | 2500         | 2500         | NC                         | NC           |
| <div> <div>PAB - PLANNING AREA<br/>BOUNDARY</div> <div>ADQ - ADEQUATE<br/>NC - NO CHANGE</div> <div>MP - MILE POST<br/>UB - URBAN BOUNDARY</div> </div> |            |                        |           |          |                                 |              |              |                            |              |

## **APPENDIX B**



## APPENDIX B

### RECOMMENDED SUBDIVISION ORDINANCES

#### DEFINITIONS

##### I. Streets and Roads:

###### A. Rural Roads

1. Principal Arterial - A rural link in a highway system serving travel, and having characteristics indicative of substantial statewide or interstate travel and existing solely to serve traffic. This network would consist of Interstate routes and other routes designated as principal arterials.
2. Minor Arterial - A rural roadway joining cities and larger towns and providing intra-state and inter-county service at relatively high overall travel speeds with minimum interference to through movement.
3. Major Collector - A road which serves major intra-county travel corridors and traffic generators and provides access to the Arterial system.
4. Minor Collector - A road which provides service to small local communities and traffic generators and provides access to the Major Collector system.
5. Local Road - A road which serves primarily to provide access to adjacent land, over relatively short distances.

###### B. Urban Streets

1. Major Thoroughfares - Major thoroughfares consist of Interstate, other freeway, expressway, or parkway roads, and major streets that provide for the expeditious movement of high volumes of traffic within and through urban areas.
2. Minor Thoroughfares - Minor thoroughfares perform the function of collecting traffic from local access streets and carrying it to the major thoroughfare system. Minor thoroughfares may be used to supplement the major thoroughfare system by facilitating minor through-traffic movements and may also serve abutting property.
3. Local Street - A local street is any street not on a higher order urban system and serves primarily to provide direct access to abutting land.



### C. Specific Type Rural or Urban Streets

1. Freeway, expressway, or parkway - Divided multilane roadways designed to carry large volumes of traffic at high speeds. A freeway provides for continuous flow of vehicles with no direct access to abutting property and with access to selected crossroads only by way of interchanges. An expressway is a facility with full or partial control of access and generally with grade separations at major intersections. A parkway is a for non-commercial traffic, with full of partial control or access.
2. Residential Collector Street - A local street which serves as a connector street between local residential streets and the thoroughfare system. Residential collector streets typically collect traffic from 100 to 400 dwelling units.
3. Local Residential Street - Cul-de-sacs, loop streets less than 2,500 feet in length, or streets less than one mile in length that do not connect thoroughfares, or serve major traffic generators, and do not collect traffic from more than 100 dwelling units.
4. Cul-de-sac - A short street having only one end open to traffic and the other end being permanently terminated and a vehicular turn-around provided.
5. Frontage Road - A road that is parallel to a partial or full access controlled facility and provides access to adjacent land.
6. Alley - A strip of land, owned publicly or privately, set aside primarily for vehicular service access to the back side of properties otherwise abutting on a street.

### II. Property

- A. Building Setback Line - A line parallel to the street in front of which no structure shall be erected.
- B. Easement - A grant by the property owner for use by the public, a corporation, or person(s), of a strip of land for a specific purpose.
- C. Lot - A portion of a subdivision, or any other parcel of land, which is intended as a unit for transfer of ownership or for development or both. The word "lot" includes the words "plat" and "parcel".

### III. Subdivision

- A. Subdivider - Any person, firm, corporation or official agent thereof, who subdivides or develops any land deemed to be a subdivision.

- B. Subdivision - All divisions of a tract or parcel of land into two or more lots, building sites, or other divisions for the purpose, immediate or future, of sale or building development and all divisions of land involving the dedication of a new street or change in existing streets; provided, however, that the following shall not be included within this definition nor subject to these regulations: (1) the combination or recombination of portions of previously platted lots where the total number of lots is not increased and the resultant lots are equal to or exceed the standards contained herein; (2) the division of land into parcels greater than ten acres where no street right-of-way dedication is involved, (3) widening or opening of streets; (4) the division of a tract in single ownership whose entire area is no greater than two acres into not more than three lots, where no street right-of-way dedication is involved and where the resultant lots are equal to or exceed the standards contained herein.
- C. Dedication - A gift, by the owner, of his property to another party without any consideration being given for the transfer. The dedication is made by written instrument and is completed with an acceptance.
- D. Reservation - Reservation of land does not involve any transfer of property rights. It constitutes an obligation to keep property free from development for a stated period of time.

## DESIGN STANDARDS

### I. Streets and Roads

The design of all roads within Wilkesboro-North Wilkesboro shall be in accordance with the accepted policies of the North Carolina Department of Transportation, Division of Highways, as taken or modified from the American Association of State Highway Officials' (AASHTO) manuals.

The provision of street rights-of-way shall conform and meet the recommendations of the Thoroughfare Plan, as adopted by the Town of Wilkesboro-North Wilkesboro.

The proposed street layout shall be coordinated with the existing street system of the surrounding area. Normally the proposed streets should be the extension of existing streets if possible.

- A. Right-of-way Widths - Right-of-way (ROW) widths shall not be less than the following and shall apply except in those cases where ROW requirements have been specifically set out the Thoroughfare Plan.

|  |                       |
|--|-----------------------|
| 1. Rural   | Min. ROW              |
| a. Principle Arterial                                      |                       |
| Freeways   | 350 ft.               |
| Other  | 200 ft.               |
| b. Minor Arterial  | 100 ft.               |
| c. Major Collector   | 100 ft.               |
| d. Minor Collector   | 80 ft.                |
| e. Local Road  | 60 ft. <sup>1</sup>   |
| 2. Urban   |                       |
| a. Major Thoroughfare other<br>than Freeway and Expressway | 90 ft.                |
| b. Minor Thoroughfare                                      | 70 ft.                |
| c. Local Street  | 60 ft. <sup>1</sup>   |
| d. Cul-de-sac  | Variable <sup>2</sup> |

The subdivider will only be required to dedicate a maximum of 100 feet of right-of-way. In cases where over 100 feet of right-of-way is desired, the subdivider will be required only to reserve the amount in excess of 100 feet. On all cases in which right-of-way is sought for a fully controlled access facility, the subdivider will only be required to make a reservation. It is strongly recommended that subdivisions provide access to properties from internal streets, and that direct property access to major thoroughfares, principle and minor arterials, and major collectors be avoided. Direct property access to minor thoroughfares is also undesirable.

A partial width right-of-way, not less than sixty feet in width, may be dedicated when adjoining undeveloped property that is owned or controlled by the subdivider; provided that the width of a partial dedication be such as to permit the installation of such facilities as may be necessary to serve abutting lots. When the said adjoining property is subdivided, the remainder of the full required right-of-way shall be dedicated.

- B. Street Widths - Widths for street and road classifications other than local shall be as recommended by the Thoroughfare Plan. Width of local roads and streets shall be as follows:

- 
- <sup>1</sup> The desirable minimum right-of-way (ROW) is 60 ft. If curb and gutter is provided, 50 feet of ROW is adequate on local residential streets.
- <sup>2</sup> The ROW dimension will depend on radius used for vehicular turnaround. Distance from edge of pavement of turnaround to ROW should not be less than distance from edge of pavement to ROW on street approaching turnaround.



1. Local Residential

Curb and Gutter section: 26 feet, face to face of curb  
Shoulder section: 20 feet to edge of pavement, 4 foot  
shoulders

2. Residential Collector

Curb and Gutter section: 34 feet, face to face of curb  
Shoulder section: 20 feet to edge of pavement, 6 foot  
shoulders

C. Geometric Characteristics - The standards outlined below shall apply to all subdivision streets proposed for addition to the State Highway System or Municipal Street System. In cases where a subdivision is sought adjacent to a proposed thoroughfare corridor, the requirements of dedication and reservation discussed under Right-of-Way shall apply.

1. Design Speed - The design speed for a roadway should be a minimum of 5 mph greater than the posted speed limit. The design speeds for subdivision type streets shall be:

| DESIGN SPEEDS  |              |               |         |
|--|--------------|---------------|---------|
| Facility Type  | Design Speed |               |         |
|  | Desirable    | Minimum Level | Rolling |
| <b>RURAL</b>   |              |               |         |
| Minor Collector Roads  | 60           | 50            | 40      |
| Local roads including Residential Collectors and Local Residential | 50           | 50            | 40      |
| <b>URBAN</b>   |              |               |         |
| Major Thoroughfares other than Freeway or Expressway               | 60           | 50            | 50      |
| Minor Thoroughfares  | 60           | 50            | 40      |
| Local Streets  | 40           | 40            | 30      |



## 2. Maximum and Minimum Grades

- a. The maximum grades in percent shall be:

| MAXIMUM VERTICAL GRADE |         |         |
|------------------------|---------|---------|
| Design Speed           | Terrain |         |
|                        | Level   | Rolling |
| 60                     | 4       | 5       |
| 50                     | 5       | 6       |
| 40                     | 6       | 7       |
| 30                     |         | 9       |

- b. Minimum grade should not be less than 0.5% .
- c. Grades for 100 feet each way from intersections (measured from edge of pavement) should not exceed 5%.
- d. For streets and roads with projected annual average daily traffic less than 250, short grades less than 500 feet long, may be 150% of the value in the above table.
3. Minimum Sight Distance - In the interest of public safety, no less than the minimum sight distance applicable shall be provided. Vertical curves that connect each change in grade shall be provided and calculated using the following parameters:

| SIGHT DISTANCE          |     |     |     |     |
|-------------------------|-----|-----|-----|-----|
| Design Speed            | 30  | 40  | 50  | 60  |
| Stopping Sight Distance |     |     |     |     |
| Minimum (ft.)           | 200 | 275 | 400 | 525 |
| Desirable Minimum (ft.) | 200 | 325 | 475 | 650 |
| Minimum K Value for:    |     |     |     |     |
| Crest curve             | 30  | 80  | 160 | 310 |
| Sag curve               | 40  | 70  | 110 | 160 |

(General practice calls for vertical curves to be multiples of 50 feet. Calculated lengths shall be rounded up in each case.)

- \* K is a coefficient by which the algebraic difference in grade may be multiplied to determine the length in feet of the vertical curve which will provide the desired sight distance.

Sight distance provided for stopped vehicles at intersections should be in accordance with "A Policy on Geometric Design of Highways and Streets, 1984".

4. The "Superelevation Table" below shows the maximum degree of curve and related maximum superelevation for design speeds. The maximum rate of roadway superelevation (e) for rural roads with no curb and gutter of 0.08. The maximum rate of superelevation for urban streets with curb and gutter is 0.06, with 0.04 being desirable.

| SUPERELEVATION TABLE |           |                    |                     |
|----------------------|-----------|--------------------|---------------------|
| Design Speed         | Maximum e | Minimum Radius ft. | Max. Deg. of Curve. |
| 30                   | 0.04      | 302                | 19 00'              |
| 40                   | 0.04      | 573                | 10 00'              |
| 50                   | 0.04      | 955                | 6 00'               |
| 60                   | 0.04      | 1,528              | 3 45'               |
| 30                   | 0.06      | 273                | 21 00'              |
| 40                   | 0.06      | 509                | 11 15'              |
| 50                   | 0.06      | 849                | 6 45'               |
| 60                   | 0.06      | 1,380              | 4 15'               |
| 30                   | 0.08      | 252                | 22 45'              |
| 40                   | 0.08      | 468                | 12 15'              |
| 50                   | 0.08      | 764                | 7 30'               |
| 60                   | 0.08      | 1,206              | 4 45'               |

e = rate of roadway superelevation, foot per foot

#### D. Intersections

1. Streets shall be laid out so as to intersect as nearly as possible at right angles, and no street should intersect any other street at an angle less than sixty-five (65) degrees.
2. Property lines at intersections should be set so that the distance from the edge of pavement, of the street turnout, to the property line will be at least as great as the distance from the edge of pavement to the property line along the intersecting streets. This property line can be established as a radius or as a sight triangle. Greater offsets from the edge of pavement to the property lines will be required, if necessary, to provide sight distance for the stopped vehicle on the side street.
3. Off-set intersections are to be avoided. Intersections which cannot be aligned should be separated by a minimum length of 200 feet between survey centerlines.

#### E. Cul-de-sacs

Cul-de-sacs shall not be more than five hundred (500) feet in length. the distance from the edge of pavement on the vehicular turnaround to the right-of-way line should not be less than the distance from the edge of pavement to right-of-way line on the street approaching the turnaround. Cul-de-sacs should not be used to avoid connection with an existing street or to avoid the extension of an important street.

#### F. Alleys

1. Alleys shall be required to serve lots used for commercial and industrial purposes except that this requirement may be waived where other definite and assured provision is made for service access. Alleys shall not be provided in residential subdivisions unless necessitated by unusual circumstances.
2. The width of an alley shall be at least twenty (20) feet.
3. Deadend alleys shall be avoided where possible, but if unavoidable, shall be provided with adequate turnaround facilities at the deadend as may be required by the Planning Board.

#### G. Permits For Connection To State Roads

An approved permit is required for connection to any existing state system road. This permit is required prior to any construction on the street or road. The application is available at the office of the District Engineer of the Division of Highways.

#### H. Offsets To Utility Poles

Poles for overhead utilities should be located clear of roadway shoulders, preferably a minimum of at least 30 feet from the edge of pavement. On streets with curb and gutter, utility poles shall be set back a minimum distance of 6 feet from the face of curb.

#### I. Wheel Chair Ramps

All street curbs being constructed or reconstructed for maintenance purposes, traffic operations, repairs, correction of utilities, or altered for any reason, shall provide wheelchair ramps for the physically handicapped at intersections where both curb and gutter and sidewalks are provided and at other major points of pedestrian flow.

J. Horizontal Width on Bridge Deck

1. The clear roadway widths for new and reconstructed bridges serving 2 lane, 2 way traffic should be as follows:

- a. Shoulder section approach

- i. Under 800 ADT design year

Minimum 28 feet width face to face of parapets of rails or pavement width plus 10 feet, whichever is greater.

- ii. 800 - 2000 ADT design year

Minimum 34 feet width face to face of parapets of rails or pavement width plus 12 feet, whichever is greater.

- iii. Over 2000 ADT design year

Minimum width of 40 feet, desirable width of 44 feet width face to face of parapets or rails.

- b. Curbs and gutter approach

- i. Under 800 ADT design year

Minimum 24 feet face to face of curbs.

- ii. Over 800 ADT design year

Width of approach pavement measured face to face of curbs.

Where curb and gutter sections are used on roadway approaches, curbs on bridges shall match the curbs on approaches in height, in width of face to face of curbs, and in crown drop. The distance from face of curb to face of parapet or rail shall be 1'6" minimum, or greater if sidewalks are required.

2. The clear roadway widths for new and reconstructed bridges having 4 or more lanes serving undivided two-way traffic should be as follows:

- a. Shoulder section approach - Width of approach pavement plus width of usable shoulders on the approach left and right. (Shoulder width 8' minimum, 10' desirable.)

- b. Curb and gutter approach - Width of approach pavement measured face to face of curbs.





## APPENDIX C



## APPENDIX C TRAVEL FORECASTING MODELS

### Base Year Travel

Travel forecasting models were developed and calibrated for the area using 1989 traffic counts socio-economic data. The updated study includes a slightly larger planning area than the 1975 Thoroughfare Plan.

The new planning area is roughly a three mile radius whose center is halfway between Wilkesboro and North Wilkesboro. The area is broken down into 61 traffic analysis zones and 20 external stations. These zones segregate, as far as possible, the area into homogeneous land uses to aid in the development and calibration of the travel forecasting models and to aid in the 2020 land use/socio-economic projections.

Traffic generation and attraction with respect to housing is based on a five category rating system. This procedure classifies dwelling unit types ranging from poor to excellent. These ratings are based on the average dwelling unit for the Wilkesboro-North Wilkesboro planning area.

Attraction factors for different trip types were calculated using regression equations. The coefficients for the variables in these equations were "borrowed" from previously completed studies. These studies were used because they had similar characteristics (population, median income, maximum trip length, industry, etc.) to the Wilkesboro-North Wilkesboro planning area. The following is a list of the "borrowed" data along with the studies from which they originated:

- 1) Dwelling unit trip generation rates ---- Thomasville
- 2) Truck trip generation rates ----- Wilson
- 3) Internal percentages for Home-Based -Work, Other-  
Home-Based, and Non-Home-Based trips -----  
----- Thomasville
- 4) Trip length frequency curves ----- Monroe

Average weekday trip productions were estimated on a zonal basis in three categories: (1) trips produced by dwelling units, (2) trips produced by trucks, and (3) trips produced by commercial vehicles. Trip generations for dwelling units ranged from 4.0 to 12.0 based on housing type. Large trucks in zones 15, 17, 36, and 41 were assigned a generation rate of 3.25 which was decreased from an initial



value due to field observations. Commercial vehicles and small trucks (trips primarily within the planning area) were assigned a generation rate of 6.70. The various generation rates are shown in **Table 8**.

The screenlines are displayed in **Figure 12**. Screenline A runs north-south and is composed of the Reddies River and Cub Creek. Screenline B follows the Yadkin River east-west across the planning area. Final model calibration resulted in the following screenline accuracy checks:

| Screenline | % Difference between<br>Ground Counts & Volumes |
|------------|---|
| <b>A</b>   | <b>3%</b>                                       |
| <b>B</b>   | <b>3%</b>                                       |

The total trips generated by dwelling units, commercial vehicles, and trucks were summed to produce total internally generated trips. This total was reduced by a factor of 0.90 to account for trips made by vehicles garaged inside the planning area but with destinations outside the planning area (the trips are included in the external station counts). The adjusted internal travel was separated into three purposes: Home-Based-Work (HBW) 24%, Other-Home-Based (OHB) 53%, and Non-Home-Based (NHB) 23%. Added to these internally generated trips are a component of internal trips that are generated by vehicles garaged outside the planning area. They are called secondary NHB trips and they totalled 23,194 in 1990. See **Table 8** for their development. The secondary trips are added to the internally produced NHB trips and distributed to each zone based on each zone's relative attractiveness as determined by the internal regression equation. Zonal productions are developed automatically in a program developed by the North Carolina DOT called IDS (see **Tables 9 & 10**).

The HBW attraction factors were taken to be the total employment within the zone. Factors for OHB, NHB, and external-internal (EXT-INT) purposes were developed using the multiple regression equation analysis. The regression analysis uses zonal employment and housing as the independent variables and computes an estimate of trips attracted as the dependant variable.

Traffic counts were taken at all major roads at the point where they intersect the planning boundary. The 1990 through and external-internal travel indices were developed for the external stations using the Synthesized Through Trip Table for Small Urban Areas computer program. **Table 11** lists the base year and design year external travel. This analysis estimated that on the average day, there were 63,100 external-internal trips and 16,000 through-trip crossings.

The total external-internal trip crossings were treated as trip productions for the external stations (101-120) with the internal zones (1-100) attracting these trips based on the previously mentioned regression equation.

The gravity model was used to distribute the internal trips (HBW, OHB, and NHB) and the external-internal travel while the through travel was assigned directly to the highway network on a minimum path basis. The trip length curves and travel time factors (Friction Factors) required by the gravity model are given in **Table 12**. The synthetic method of developing travel patterns was checked by comparing the assignment of the travel on the existing highway system to actual ground counts at established locations. The results of the accuracy checks (mentioned earlier as screenline checks) were felt to be within acceptable limits for the purpose of this study.

### **Design Year Travel**

The year 2020 travel was developed using the same techniques employed in synthesizing the 1990 travel. The Region "D" Council of Governments (COG) working in cooperation with the Municipalities and the County projected the necessary zonal housing and employment data. These projections were made for the year 2010 and had to be adjusted for the design year 2020. The generation rates remained constant from the 1990 data. The projected housing, employment and traffic is shown in the IDS data in **Table 10**.

The 2020 secondary NHB trips were computed in IDS using the projected data and were estimated to be 38,000. A growth rate analysis using historic travel trends and projected development growth was used to estimate traffic volumes at each station for 2020 (see **Table 11**). These volumes were converted to external-internal and through trips. The total external-internal trips were estimated to be 100,400 and the total through trips to be 27,700. These trips were distributed with the Fratar trip-end balancing program. The HBW, OHB, NHB, and EXT-INT trips were distributed using the same gravity model employed in the base year.

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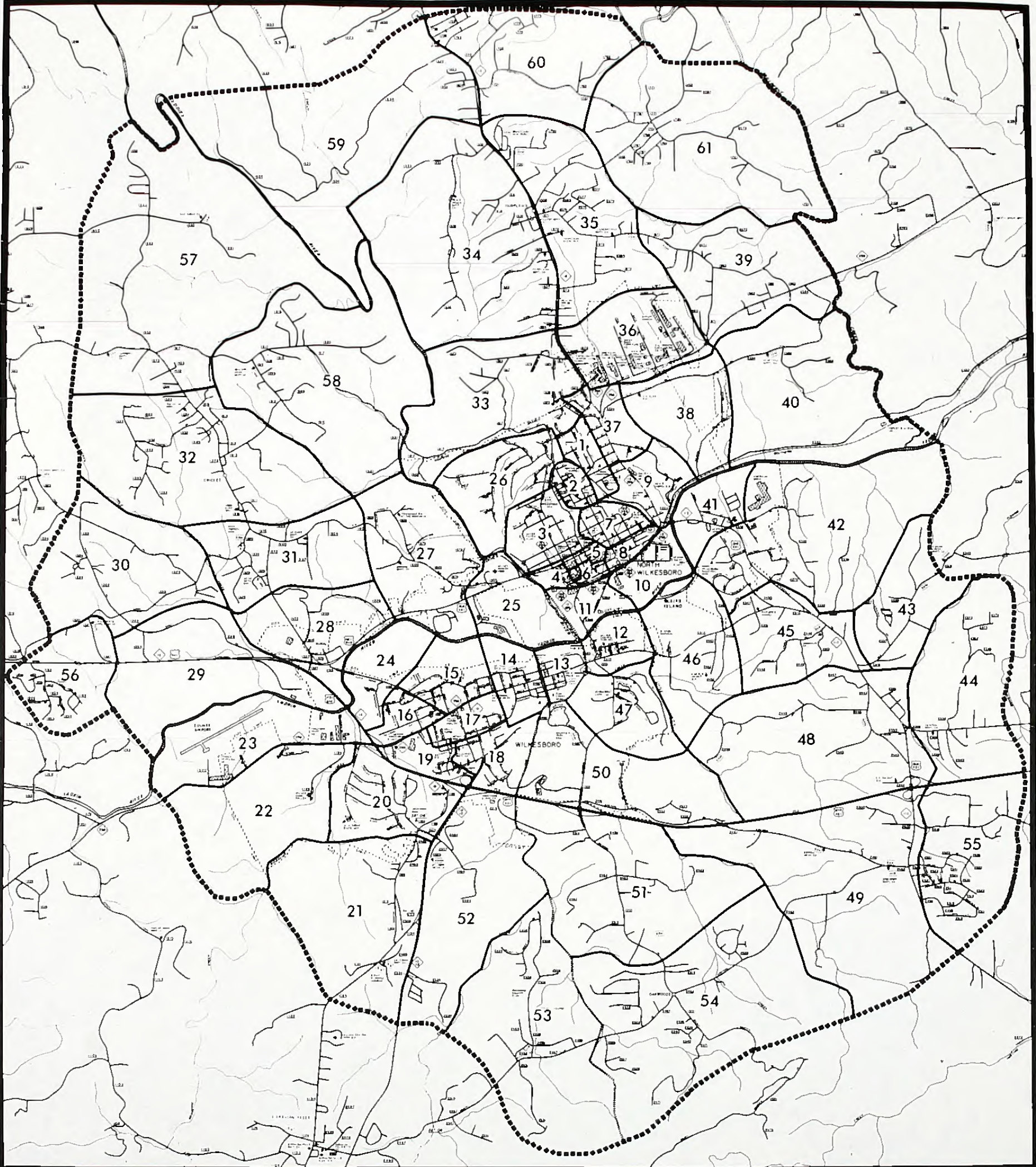
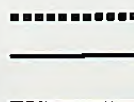


FIGURE 12  
**ZONE MAP**  
 LEGEND

- 1. Major Road (US Highway, State Road, County Road)
- 2. Minor Road (Local Road)
- 3. Railway
- 4. Waterway (River, Lake, Pond)
- 5. Airway (Airport)
- 6. Public Building (City Hall, Court House, School, etc.)
- 7. Industrial Building (Factory, Warehouse, etc.)
- 8. Residential Building (House, Apartment, etc.)
- 9. Commercial Building (Store, Office, etc.)
- 10. Public Utility (Power Plant, Water Treatment Plant, etc.)
- 11. Cemetery
- 12. Park
- 13. Golf Course
- 14. Beach
- 15. Other Landmark
- 16. Planning Boundary
- 17. Zone Line
- 18. Screen Line



PLANNING BOUNDARY  
 ZONE LINE  
 SCREEN LINE



**NORTH WILKESBORO**  
**WILKESBORO**  
 AND VICINITY  
 WILKES COUNTY  
 NORTH CAROLINA

1961-1962  
 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS - PLANNING AND RESEARCH BRANCH  
 IN COOPERATION WITH THE  
 U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION







**APPENDIX C TABLE 8  
TRAVEL MODEL INPUT VARIABLES**

| TRIP PERCENTAGES BY PURPOSE       | PERCENT OF INTERNAL TRIPS |
|-----------------------------------|---------------------------|
| Internal of Total -- 90 %         | Home-based work ---- 24 % |
|                                   | Other home-based --- 53 % |
| PERSONS PER DWELLING UNIT -- 2.44 | Non home-based ----- 23 % |

| DWELLING UNIT AUTO DRIVER TRIP GENERATION RATES |      |
|---|------|
| Housing Classification                          | Rate |
| Excellent                                       | 12.0 |
| Above Average                                   | 10.0 |
| Average   | 8.0  |
| Below Average                                   | 6.0  |
| Poor  | 4.0  |

$$\text{COMPOSITE FACTOR} = \frac{1990 \text{ PERSON/VEH.}}{2020 \text{ PERSON/VEH.}} \times \frac{\text{USAGE FACTOR}}{1} \times \frac{2020 \text{ PERSON/DU}}{1990 \text{ PERSON/DU}}$$

$$\text{GENERATION RATE INCREASE} = \frac{\text{AVERAGE 1990 TRIP RATE}}{\text{AVERAGE 1990 TRIP RATE}} \times \frac{\text{COMPOSITE FACTOR}}{1} - \frac{\text{AVERAGE 1990 TRIP RATE}}{\text{AVERAGE 1990 TRIP RATE}}$$

**EXAMPLE:**

$$\text{COMPOSITE FACTOR} = \frac{1.50}{1.30} \times \frac{2.20}{2.44} \times 0.99 = 1.03$$

$$\text{GENERATION RATE INCREASE} = (7.25 \times 1.03) - 7.25 = 0.22 \quad (\text{USE } 0.00)$$

Based on the above calculation, it was deemed unnecessary to increase the generation rates for the design year.

| SECONDARY NON HOME-BASED TRIPS |   |
|--------------------------------|---|
| Secondary NHB Trips            | $= \frac{\text{Total Ext-Int Trips} - \text{Ext-Int Trips Garaged Inside Planning Area}}{\text{Total Ext-Int Trips}} \times 0.40$ |
| 1990 Secondary Trips           | $= [63,101 - (46,854 \times 0.10)] \times 0.40 = 23,366$  |
| 2020 Secondary Trips           | $= [100,383 - (52,968 \times 0.10)] \times 0.40 = 38,034$   |

APPENDIX C TABLE 8  
TRAVEL MODEL INPUT VARIABLES  
(CONTINUED)

REGRESSION EQUATIONS

OHB and NHB Purposes:

$$\text{Trip Attractions} = 6.25X_1 + 1.96X_2 + 2.10X_3 + 0.66X_4 \\ + 2.38X_5 + 0.50X_{10}$$

Where:  $X_1$  = Highway Retail Employment

$X_2$  = Other Retail Employment

$X_3$  = Office and Institutional Employment

$X_4$  = Industrial Employment

$X_5$  = Warehouse, Service and other employment

$X_{10}$  = Dwelling Units

External-Internal Purpose:

Trip Attractions = same equation as above except the coefficient of  $X_{10}$  has been increased to 1.00

HBW Purpose:

Trip Attractions = Total Employment

NOTE: THE DATA FOR THE HOUSING AND EMPLOYMENT VARIABLES IS LISTED IN TABLES 9 & 10.

## APPENDIX C TABLE 9

INTERNAL DATA LISTING  
WILKESBORO-NORTH WILKESBORO PLANNING AREA

YEAR 1990

DWELLING UNITS

SPECIAL VEHICLES

| ZONE | EXCL | AAVG | AVG | BAVG | POOR | LARGE<br>TRUCKS | SMALL<br>TRUCKS | COMMERCIAL<br>VEHICLES |
|------|------|------|-----|------|------|-----------------|-----------------|------------------------|
| 1    | 0    | 0    | 125 | 40   | 0    |                 | 0               | 0                      |
| 2    | 0    | 0    | 60  | 0    | 0    |                 | 0               | 0                      |
| 3    | 0    | 0    | 105 | 0    | 0    |                 | 6               | 2                      |
| 4    | 0    | 0    | 0   | 0    | 0    |                 | 17              | 2                      |
| 5    | 0    | 0    | 21  | 0    | 0    |                 | 12              | 4                      |
| 6    | 0    | 0    | 0   | 0    | 0    |                 | 13              | 18                     |
| 7    | 0    | 0    | 71  | 0    | 0    |                 | 0               | 6                      |
| 8    | 0    | 0    | 38  | 0    | 0    |                 | 29              | 4                      |
| 9    | 0    | 0    | 0   | 0    | 28   |                 | 28              | 5                      |
| 10   | 0    | 0    | 5   | 0    | 0    |                 | 26              | 2                      |
| 11   | 0    | 0    | 0   | 0    | 0    |                 | 8               | 2                      |
| 12   | 0    | 0    | 35  | 0    | 0    |                 | 4               | 0                      |
| 13   | 0    | 0    | 33  | 0    | 0    |                 | 37              | 4                      |
| 14   | 0    | 0    | 50  | 0    | 0    |                 | 11              | 54                     |
| 15   | 0    | 0    | 47  | 0    | 0    | 84              | 0               | 6                      |
| 16   | 0    | 70   | 0   | 0    | 0    |                 | 21              | 16                     |
| 17   | 0    | 0    | 28  | 0    | 0    | 185             | 0               | 45                     |
| 18   | 0    | 0    | 36  | 20   | 0    |                 | 5               | 0                      |
| 19   | 0    | 0    | 31  | 0    | 0    |                 | 9               | 4                      |
| 20   | 0    | 0    | 200 | 0    | 0    |                 | 8               | 4                      |
| 21   | 0    | 119  | 0   | 0    | 0    |                 | 3               | 4                      |
| 22   | 0    | 0    | 0   | 14   | 0    |                 | 17              | 5                      |
| 23   | 0    | 0    | 0   | 2    | 0    |                 | 23              | 19                     |
| 24   | 0    | 0    | 7   | 0    | 0    |                 | 0               | 3                      |
| 25   | 0    | 0    | 0   | 0    | 1    |                 | 24              | 11                     |
| 26   | 0    | 85   | 48  | 0    | 0    |                 | 0               | 0                      |
| 27   | 0    | 0    | 100 | 20   | 49   |                 | 28              | 5                      |
| 28   | 0    | 0    | 42  | 1    | 0    |                 | 14              | 4                      |
| 29   | 0    | 0    | 48  | 48   | 0    |                 | 20              | 3                      |
| 30   | 0    | 0    | 0   | 127  | 0    |                 | 3               | 3                      |
| 31   | 0    | 0    | 180 | 0    | 0    |                 | 17              | 2                      |
| 32   | 0    | 0    | 0   | 213  | 0    |                 | 2               | 0                      |
| 33   | 0    | 0    | 0   | 150  | 0    |                 | 0               | 0                      |
| 34   | 0    | 0    | 0   | 250  | 0    |                 | 1               | 0                      |
| 35   | 0    | 0    | 0   | 168  | 0    |                 | 19              | 1                      |
| 36   | 0    | 35   | 0   | 0    | 0    | 100             | 0               | 25                     |
| 37   | 0    | 0    | 0   | 15   | 0    |                 | 2               | 3                      |
| 38   | 0    | 0    | 35  | 0    | 0    |                 | 0               | 2                      |
| 39   | 0    | 0    | 0   | 137  | 0    |                 | 2               | 0                      |
| 40   | 0    | 0    | 50  | 0    | 0    |                 | 15              | 2                      |
| 41   | 0    | 0    | 0   | 48   | 0    | 85              | 0               | 42                     |
| 42   | 0    | 0    | 137 | 0    | 0    |                 | 34              | 4                      |

TABLE 9  
C-9



YEAR 1990

DWELLING UNITS

SPECIAL VEHICLES

| ZONE | EXCL | AAVG | AVG | BAVG | POOR | LARGE<br>TRUCKS | SMALL<br>TRUCKS | COMMERCIAL<br>VEHICLES |
|------|------|------|-----|------|------|-----------------|-----------------|------------------------|
| 43   | 0    | 0    | 106 | 0    | 0    |                 | 10              | 0                      |
| 44   | 0    | 0    | 79  | 25   | 0    |                 | 0               | 0                      |
| 45   | 0    | 0    | 150 | 0    | 0    |                 | 27              | 2                      |
| 46   | 0    | 0    | 49  | 0    | 0    |                 | 1               | 0                      |
| 47   | 0    | 85   | 0   | 0    | 0    |                 | 0               | 0                      |
| 48   | 0    | 0    | 96  | 24   | 0    |                 | 1               | 1                      |
| 49   | 0    | 0    | 48  | 30   | 0    |                 | 37              | 19                     |
| 50   | 0    | 0    | 0   | 0    | 50   |                 | 0               | 60                     |
| 51   | 0    | 0    | 83  | 45   | 0    |                 | 0               | 0                      |
| 52   | 51   | 0    | 0   | 149  | 0    |                 | 7               | 7                      |
| 53   | 0    | 0    | 0   | 103  | 0    |                 | 0               | 0                      |
| 54   | 0    | 0    | 132 | 0    | 0    |                 | 0               | 0                      |
| 55   | 0    | 0    | 185 | 0    | 0    |                 | 0               | 0                      |
| 56   | 0    | 0    | 90  | 41   | 0    |                 | 3               | 0                      |
| 57   | 0    | 0    | 0   | 107  | 0    |                 | 0               | 0                      |
| 58   | 0    | 0    | 0   | 157  | 0    |                 | 2               | 0                      |
| 59   | 0    | 0    | 0   | 57   | 0    |                 | 0               | 0                      |
| 60   | 0    | 0    | 0   | 135  | 0    |                 | 0               | 0                      |
| 61   | 0    | 0    | 0   | 132  | 0    |                 | 0               | 0                      |
| 62   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 63   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 64   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 65   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 66   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 67   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 68   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 69   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 70   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 71   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 72   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 73   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 74   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 75   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 76   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 77   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 78   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 79   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 80   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 81   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 82   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 83   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 84   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 85   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 86   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 87   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 88   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 89   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 90   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |

TABLE 9  
C-10

YEAR 1990

DWELLING UNITS

SPECIAL VEHICLES

| ZONE | EXCL | AAVG | AVG | BAVG | POOR | LARGE<br>TRUCKS | SMALL<br>TRUCKS | COMMERCIAL<br>VEHICLES |
|------|------|------|-----|------|------|-----------------|-----------------|------------------------|
| 91   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 92   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 93   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 94   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 95   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 96   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 97   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 98   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 99   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 100  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 101  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 102  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 103  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 104  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 105  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 106  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 107  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 108  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 109  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 110  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 111  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 112  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 113  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 114  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 115  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 116  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 117  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 118  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 119  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 120  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |

1990

## EMPLOYMENT TYPE

| ZONE | HWY<br>RETAIL | OTHER<br>RETAIL | OFFICE<br>INSTITUT. | INDUSTRIAL | OTHER |
|------|---------------|-----------------|---------------------|------------|-------|
| 1    | 0             | 0               | 0                   | 0          | 0     |
| 2    | 0             | 3               | 0                   | 0          | 0     |
| 3    | 0             | 0               | 0                   | 26         | 27    |
| 4    | 5             | 11              | 6                   | 500        | 22    |
| 5    | 24            | 35              | 15                  | 48         | 22    |
| 6    | 33            | 53              | 184                 | 71         | 39    |
| 7    | 0             | 0               | 0                   | 22         | 15    |
| 8    | 28            | 57              | 7                   | 166        | 38    |
| 9    | 0             | 11              | 0                   | 51         | 13    |
| 10   | 3             | 91              | 0                   | 13         | 3     |
| 11   | 50            | 36              | 37                  | 10         | 13    |
| 12   | 0             | 15              | 21                  | 0          | 116   |
| 13   | 0             | 29              | 1                   | 82         | 17    |
| 14   | 0             | 8               | 174                 | 0          | 12    |
| 15   | 16            | 0               | 4                   | 124        | 3     |
| 16   | 12            | 13              | 105                 | 5          | 3     |
| 17   | 0             | 3               | 15                  | 1750       | 99    |
| 18   | 0             | 1               | 0                   | 0          | 11    |
| 19   | 5             | 13              | 1                   | 606        | 5     |
| 20   | 25            | 20              | 14                  | 11         | 14    |
| 21   | 0             | 0               | 0                   | 42         | 69    |
| 22   | 28            | 0               | 35                  | 0          | 300   |
| 23   | 6             | 3               | 0                   | 610        | 12    |
| 24   | 0             | 0               | 0                   | 0          | 4     |
| 25   | 46            | 20              | 14                  | 36         | 678   |
| 26   | 0             | 0               | 0                   | 0          | 0     |
| 27   | 33            | 75              | 3                   | 46         | 10    |
| 28   | 106           | 340             | 0                   | 19         | 27    |
| 29   | 130           | 302             | 41                  | 94         | 122   |
| 30   | 0             | 30              | 0                   | 0          | 0     |
| 31   | 0             | 25              | 0                   | 90         | 0     |
| 32   | 9             | 14              | 0                   | 30         | 46    |
| 33   | 0             | 20              | 0                   | 0          | 0     |
| 34   | 1             | 10              | 0                   | 6          | 3     |
| 35   | 10            | 114             | 0                   | 64         | 47    |
| 36   | 25            | 0               | 567                 | 1113       | 56    |
| 37   | 0             | 0               | 0                   | 9          | 8     |
| 38   | 0             | 12              | 0                   | 161        | 0     |
| 39   | 40            | 27              | 6                   | 22         | 0     |
| 40   | 0             | 0               | 0                   | 0          | 0     |
| 41   | 0             | 0               | 0                   | 287        | 0     |
| 42   | 0             | 0               | 0                   | 139        | 0     |
| 43   | 0             | 0               | 0                   | 43         | 0     |
| 44   | 0             | 0               | 0                   | 0          | 0     |
| 45   | 0             | 20              | 0                   | 45         | 0     |
| 46   | 0             | 4               | 0                   | 6          | 0     |
| 47   | 0             | 0               | 0                   | 0          | 0     |
| 48   | 6             | 26              | 0                   | 0          | 41    |

TABLE 9  
C-12

1990

## EMPLOYMENT TYPE

| ZONE | HWY<br>RETAIL | OTHER<br>RETAIL | OFFICE<br>INSTITUT. | INDUSTRIAL | OTHER |
|------|---------------|-----------------|---------------------|------------|-------|
| 49   | 4             | 3               | 0                   | 97         | 0     |
| 50   | 0             | 0               | 520                 | 0          | 0     |
| 51   | 0             | 0               | 0                   | 0          | 0     |
| 52   | 0             | 0               | 0                   | 153        | 8     |
| 53   | 0             | 0               | 0                   | 0          | 0     |
| 54   | 0             | 0               | 0                   | 0          | 0     |
| 55   | 0             | 0               | 0                   | 0          | 0     |
| 56   | 1             | 10              | 0                   | 0          | 5     |
| 57   | 8             | 2               | 0                   | 0          | 0     |
| 58   | 0             | 4               | 0                   | 22         | 0     |
| 59   | 3             | 3               | 0                   | 3          | 2     |
| 60   | 3             | 0               | 0                   | 0          | 0     |
| 61   | 0             | 0               | 0                   | 0          | 0     |
| 62   | 0             | 0               | 0                   | 0          | 0     |
| 63   | 0             | 0               | 0                   | 0          | 0     |
| 64   | 0             | 0               | 0                   | 0          | 0     |
| 65   | 0             | 0               | 0                   | 0          | 0     |
| 66   | 0             | 0               | 0                   | 0          | 0     |
| 67   | 0             | 0               | 0                   | 0          | 0     |
| 68   | 0             | 0               | 0                   | 0          | 0     |
| 69   | 0             | 0               | 0                   | 0          | 0     |
| 70   | 0             | 0               | 0                   | 0          | 0     |
| 71   | 0             | 0               | 0                   | 0          | 0     |
| 72   | 0             | 0               | 0                   | 0          | 0     |
| 73   | 0             | 0               | 0                   | 0          | 0     |
| 74   | 0             | 0               | 0                   | 0          | 0     |
| 75   | 0             | 0               | 0                   | 0          | 0     |
| 76   | 0             | 0               | 0                   | 0          | 0     |
| 77   | 0             | 0               | 0                   | 0          | 0     |
| 78   | 0             | 0               | 0                   | 0          | 0     |
| 79   | 0             | 0               | 0                   | 0          | 0     |
| 80   | 0             | 0               | 0                   | 0          | 0     |
| 81   | 0             | 0               | 0                   | 0          | 0     |
| 82   | 0             | 0               | 0                   | 0          | 0     |
| 83   | 0             | 0               | 0                   | 0          | 0     |
| 84   | 0             | 0               | 0                   | 0          | 0     |
| 85   | 0             | 0               | 0                   | 0          | 0     |
| 86   | 0             | 0               | 0                   | 0          | 0     |
| 87   | 0             | 0               | 0                   | 0          | 0     |
| 88   | 0             | 0               | 0                   | 0          | 0     |
| 89   | 0             | 0               | 0                   | 0          | 0     |
| 90   | 0             | 0               | 0                   | 0          | 0     |
| 91   | 0             | 0               | 0                   | 0          | 0     |
| 92   | 0             | 0               | 0                   | 0          | 0     |
| 93   | 0             | 0               | 0                   | 0          | 0     |
| 94   | 0             | 0               | 0                   | 0          | 0     |
| 95   | 0             | 0               | 0                   | 0          | 0     |
| 96   | 0             | 0               | 0                   | 0          | 0     |

TABLE 9  
C-13



1990

## EMPLOYMENT TYPE

| ZONE | HWY<br>RETAIL | OTHER<br>RETAIL | OFFICE<br>INSTITUT. | INDUSTRIAL | OTHER |
|------|---------------|-----------------|---------------------|------------|-------|
| 97   | 0             | 0               | 0                   | 0          | 0     |
| 98   | 0             | 0               | 0                   | 0          | 0     |
| 99   | 0             | 0               | 0                   | 0          | 0     |
| 100  | 0             | 0               | 0                   | 0          | 0     |
| 101  | 0             | 0               | 0                   | 0          | 0     |
| 102  | 0             | 0               | 0                   | 0          | 0     |
| 103  | 0             | 0               | 0                   | 0          | 0     |
| 104  | 0             | 0               | 0                   | 0          | 0     |
| 105  | 0             | 0               | 0                   | 0          | 0     |
| 106  | 0             | 0               | 0                   | 0          | 0     |
| 107  | 0             | 0               | 0                   | 0          | 0     |
| 108  | 0             | 0               | 0                   | 0          | 0     |
| 109  | 0             | 0               | 0                   | 0          | 0     |
| 110  | 0             | 0               | 0                   | 0          | 0     |
| 111  | 0             | 0               | 0                   | 0          | 0     |
| 112  | 0             | 0               | 0                   | 0          | 0     |
| 113  | 0             | 0               | 0                   | 0          | 0     |
| 114  | 0             | 0               | 0                   | 0          | 0     |
| 115  | 0             | 0               | 0                   | 0          | 0     |
| 116  | 0             | 0               | 0                   | 0          | 0     |
| 117  | 0             | 0               | 0                   | 0          | 0     |
| 118  | 0             | 0               | 0                   | 0          | 0     |
| 119  | 0             | 0               | 0                   | 0          | 0     |
| 120  | 0             | 0               | 0                   | 0          | 0     |

APPENDIX C TABLE 10  
INTERNAL DATA LISTING  
WILKESBORO-NORTH WILKESBORO PLANNING AREA

YEAR 2020

DWELLING UNITS

SPECIAL VEHICLES

| ZONE | EXCL | AAVG | AVG | BAVG | POOR | LARGE<br>TRUCKS | SMALL<br>TRUCKS | COMMERCIAL<br>VEHICLES |
|------|------|------|-----|------|------|-----------------|-----------------|------------------------|
| 1    | 0    | 0    | 125 | 40   | 0    |                 | 0               | 0                      |
| 2    | 0    | 0    | 60  | 0    | 0    |                 | 0               | 0                      |
| 3    | 0    | 0    | 105 | 0    | 0    |                 | 6               | 2                      |
| 4    | 0    | 0    | 0   | 0    | 0    |                 | 17              | 2                      |
| 5    | 0    | 0    | 21  | 0    | 0    |                 | 12              | 4                      |
| 6    | 0    | 0    | 0   | 0    | 0    |                 | 13              | 18                     |
| 7    | 0    | 0    | 71  | 0    | 0    |                 | 0               | 6                      |
| 8    | 0    | 0    | 38  | 0    | 0    |                 | 29              | 4                      |
| 9    | 0    | 0    | 0   | 0    | 28   |                 | 28              | 5                      |
| 10   | 0    | 0    | 5   | 0    | 0    |                 | 26              | 2                      |
| 11   | 0    | 0    | 0   | 0    | 0    |                 | 8               | 2                      |
| 12   | 0    | 0    | 35  | 0    | 0    |                 | 4               | 0                      |
| 13   | 0    | 0    | 33  | 0    | 0    |                 | 37              | 4                      |
| 14   | 0    | 0    | 50  | 0    | 0    |                 | 11              | 54                     |
| 15   | 0    | 0    | 47  | 0    | 0    | 84              | 0               | 6                      |
| 16   | 0    | 70   | 0   | 0    | 0    |                 | 21              | 16                     |
| 17   | 0    | 0    | 28  | 0    | 0    | 185             | 0               | 45                     |
| 18   | 0    | 0    | 36  | 20   | 0    |                 | 5               | 0                      |
| 19   | 0    | 0    | 31  | 0    | 0    |                 | 9               | 4                      |
| 20   | 0    | 0    | 200 | 0    | 0    |                 | 8               | 4                      |
| 21   | 0    | 223  | 0   | 0    | 0    |                 | 3               | 4                      |
| 22   | 0    | 0    | 0   | 14   | 0    |                 | 17              | 5                      |
| 23   | 0    | 0    | 0   | 2    | 0    |                 | 23              | 19                     |
| 24   | 0    | 0    | 7   | 0    | 0    |                 | 0               | 3                      |
| 25   | 0    | 0    | 0   | 0    | 1    |                 | 24              | 11                     |
| 26   | 0    | 85   | 48  | 0    | 0    |                 | 0               | 0                      |
| 27   | 0    | 0    | 100 | 20   | 49   |                 | 28              | 5                      |
| 28   | 0    | 0    | 42  | 1    | 0    |                 | 14              | 4                      |
| 29   | 0    | 0    | 48  | 48   | 0    |                 | 20              | 3                      |
| 30   | 0    | 0    | 0   | 127  | 0    |                 | 3               | 3                      |
| 31   | 0    | 0    | 180 | 0    | 0    |                 | 17              | 2                      |
| 32   | 0    | 0    | 0   | 213  | 0    |                 | 2               | 0                      |
| 33   | 0    | 0    | 0   | 150  | 0    |                 | 0               | 0                      |
| 34   | 0    | 0    | 0   | 414  | 0    |                 | 1               | 0                      |
| 35   | 0    | 0    | 0   | 294  | 0    |                 | 19              | 1                      |
| 36   | 0    | 35   | 0   | 0    | 0    | 100             | 0               | 25                     |
| 37   | 0    | 0    | 0   | 15   | 0    |                 | 2               | 3                      |
| 38   | 0    | 0    | 35  | 0    | 0    |                 | 0               | 2                      |
| 39   | 0    | 0    | 0   | 256  | 0    |                 | 2               | 0                      |
| 40   | 0    | 0    | 116 | 0    | 0    |                 | 15              | 2                      |
| 41   | 0    | 0    | 0   | 48   | 0    | 85              | 0               | 42                     |
| 42   | 0    | 0    | 137 | 0    | 0    |                 | 34              | 4                      |
| 43   | 0    | 0    | 106 | 0    | 0    |                 | 10              | 0                      |
| 44   | 0    | 0    | 79  | 25   | 0    |                 | 0               | 0                      |

TABLE 10  
C-15

YEAR 2020

DWELLING UNITS

SPECIAL VEHICLES

| ZONE | EXCL | AAVG | AVG | BAVG | POOR | LARGE<br>TRUCKS | SMALL<br>TRUCKS | COMMERCIAL<br>VEHICLES |
|------|------|------|-----|------|------|-----------------|-----------------|------------------------|
| 45   | 0    | 0    | 150 | 0    | 0    |                 | 27              | 2                      |
| 46   | 0    | 0    | 49  | 0    | 0    |                 | 1               | 0                      |
| 47   | 0    | 85   | 0   | 0    | 0    |                 | 0               | 0                      |
| 48   | 0    | 0    | 179 | 45   | 0    |                 | 1               | 1                      |
| 49   | 0    | 0    | 48  | 30   | 0    |                 | 37              | 19                     |
| 50   | 0    | 0    | 0   | 0    | 50   |                 | 0               | 60                     |
| 51   | 0    | 0    | 83  | 45   | 0    |                 | 0               | 0                      |
| 52   | 95   | 0    | 0   | 278  | 0    |                 | 7               | 7                      |
| 53   | 0    | 0    | 0   | 103  | 0    |                 | 0               | 0                      |
| 54   | 0    | 0    | 132 | 0    | 0    |                 | 0               | 0                      |
| 55   | 0    | 0    | 185 | 0    | 0    |                 | 0               | 0                      |
| 56   | 0    | 0    | 90  | 41   | 0    |                 | 3               | 0                      |
| 57   | 0    | 0    | 0   | 107  | 0    |                 | 0               | 0                      |
| 58   | 0    | 0    | 0   | 157  | 0    |                 | 2               | 0                      |
| 59   | 0    | 0    | 0   | 57   | 0    |                 | 0               | 0                      |
| 60   | 0    | 0    | 0   | 135  | 0    |                 | 0               | 0                      |
| 61   | 0    | 0    | 0   | 132  | 0    |                 | 0               | 0                      |
| 62   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 63   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 64   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 65   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 66   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 67   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 68   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 69   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 70   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 71   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 72   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 73   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 74   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 75   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 76   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 77   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 78   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 79   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 80   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 81   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 82   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 83   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 84   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 85   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 86   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 87   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 88   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 89   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 90   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 91   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 92   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |

TABLE 10  
C-16

YEAR 2020

DWELLING UNITS

SPECIAL VEHICLES

| ZONE | EXCL | AAVG | AVG | BAVG | POOR | LARGE<br>TRUCKS | SMALL<br>TRUCKS | COMMERCIAL<br>VEHICLES |
|------|------|------|-----|------|------|-----------------|-----------------|------------------------|
| 93   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 94   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 95   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 96   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 97   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 98   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 99   | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 100  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 101  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 102  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 103  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 104  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 105  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 106  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 107  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 108  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 109  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 110  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 111  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 112  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 113  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 114  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 115  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 116  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 117  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 118  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 119  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |
| 120  | 0    | 0    | 0   | 0    | 0    |                 | 0               | 0                      |

TABLE 10  
C-17



YEAR 2020

| ZONE | EMPLOYMENT TYPE |                 |                     |            |       |
|------|-----------------|-----------------|---------------------|------------|-------|
|      | HWY<br>RETAIL   | OTHER<br>RETAIL | OFFICE<br>INSTITUT. | INDUSTRIAL | OTHER |
| 1    | 0               | 0               | 0                   | 0          | 0     |
| 2    | 0               | 3               | 0                   | 0          | 0     |
| 3    | 0               | 0               | 0                   | 26         | 27    |
| 4    | 5               | 11              | 6                   | 500        | 22    |
| 5    | 24              | 35              | 15                  | 48         | 22    |
| 6    | 33              | 53              | 184                 | 71         | 39    |
| 7    | 0               | 0               | 0                   | 22         | 15    |
| 8    | 28              | 57              | 7                   | 166        | 38    |
| 9    | 0               | 11              | 0                   | 51         | 13    |
| 10   | 3               | 91              | 0                   | 13         | 3     |
| 11   | 50              | 36              | 37                  | 10         | 13    |
| 12   | 0               | 15              | 21                  | 0          | 116   |
| 13   | 0               | 29              | 1                   | 82         | 17    |
| 14   | 0               | 8               | 174                 | 0          | 12    |
| 15   | 16              | 0               | 4                   | 124        | 3     |
| 16   | 12              | 13              | 105                 | 5          | 3     |
| 17   | 0               | 3               | 201                 | 1750       | 99    |
| 18   | 0               | 1               | 0                   | 0          | 11    |
| 19   | 5               | 13              | 1                   | 606        | 5     |
| 20   | 25              | 20              | 14                  | 11         | 14    |
| 21   | 0               | 0               | 0                   | 42         | 69    |
| 22   | 28              | 0               | 35                  | 0          | 300   |
| 23   | 6               | 3               | 0                   | 610        | 12    |
| 24   | 0               | 0               | 0                   | 0          | 4     |
| 25   | 46              | 20              | 14                  | 36         | 678   |
| 26   | 0               | 0               | 0                   | 0          | 0     |
| 27   | 33              | 75              | 3                   | 46         | 10    |
| 28   | 106             | 340             | 0                   | 19         | 27    |
| 29   | 177             | 317             | 43                  | 128        | 167   |
| 30   | 0               | 30              | 0                   | 0          | 0     |
| 31   | 0               | 25              | 0                   | 90         | 0     |
| 32   | 9               | 14              | 0                   | 30         | 46    |
| 33   | 0               | 20              | 0                   | 0          | 0     |
| 34   | 3               | 13              | 0                   | 6          | 3     |
| 35   | 11              | 120             | 0                   | 67         | 49    |
| 36   | 25              | 0               | 567                 | 1113       | 56    |
| 37   | 0               | 0               | 0                   | 9          | 8     |
| 38   | 0               | 12              | 0                   | 161        | 0     |
| 39   | 40              | 27              | 6                   | 22         | 0     |
| 40   | 0               | 0               | 0                   | 0          | 0     |
| 41   | 0               | 0               | 0                   | 287        | 0     |
| 42   | 0               | 0               | 0                   | 139        | 0     |
| 43   | 0               | 0               | 0                   | 43         | 0     |
| 44   | 0               | 0               | 0                   | 0          | 0     |
| 45   | 0               | 20              | 0                   | 45         | 0     |
| 46   | 0               | 4               | 0                   | 6          | 0     |
| 47   | 0               | 0               | 0                   | 0          | 0     |
| 48   | 9               | 39              | 0                   | 0          | 43    |
| 49   | 4               | 3               | 0                   | 97         | 0     |

TABLE 10  
C-18

YEAR 2020

EMPLOYMENT TYPE

| ZONE | HWY<br>RETAIL | OTHER<br>RETAIL | OFFICE<br>INSTITUT. | INDUSTRIAL | OTHER |
|------|---------------|-----------------|---------------------|------------|-------|
| 50   | 0             | 0               | 520                 | 0          | 0     |
| 51   | 0             | 0               | 0                   | 0          | 0     |
| 52   | 0             | 0               | 0                   | 153        | 8     |
| 53   | 0             | 0               | 0                   | 0          | 0     |
| 54   | 0             | 0               | 0                   | 0          | 0     |
| 55   | 0             | 0               | 0                   | 0          | 0     |
| 56   | 1             | 10              | 0                   | 0          | 5     |
| 57   | 8             | 2               | 0                   | 0          | 0     |
| 58   | 0             | 4               | 0                   | 22         | 0     |
| 59   | 3             | 3               | 0                   | 3          | 2     |
| 60   | 3             | 0               | 0                   | 0          | 0     |
| 61   | 0             | 0               | 0                   | 0          | 0     |
| 62   | 0             | 0               | 0                   | 0          | 0     |
| 63   | 0             | 0               | 0                   | 0          | 0     |
| 64   | 0             | 0               | 0                   | 0          | 0     |
| 65   | 0             | 0               | 0                   | 0          | 0     |
| 66   | 0             | 0               | 0                   | 0          | 0     |
| 67   | 0             | 0               | 0                   | 0          | 0     |
| 68   | 0             | 0               | 0                   | 0          | 0     |
| 69   | 0             | 0               | 0                   | 0          | 0     |
| 70   | 0             | 0               | 0                   | 0          | 0     |
| 71   | 0             | 0               | 0                   | 0          | 0     |
| 72   | 0             | 0               | 0                   | 0          | 0     |
| 73   | 0             | 0               | 0                   | 0          | 0     |
| 74   | 0             | 0               | 0                   | 0          | 0     |
| 75   | 0             | 0               | 0                   | 0          | 0     |
| 76   | 0             | 0               | 0                   | 0          | 0     |
| 77   | 0             | 0               | 0                   | 0          | 0     |
| 78   | 0             | 0               | 0                   | 0          | 0     |
| 79   | 0             | 0               | 0                   | 0          | 0     |
| 80   | 0             | 0               | 0                   | 0          | 0     |
| 81   | 0             | 0               | 0                   | 0          | 0     |
| 82   | 0             | 0               | 0                   | 0          | 0     |
| 83   | 0             | 0               | 0                   | 0          | 0     |
| 84   | 0             | 0               | 0                   | 0          | 0     |
| 85   | 0             | 0               | 0                   | 0          | 0     |
| 86   | 0             | 0               | 0                   | 0          | 0     |
| 87   | 0             | 0               | 0                   | 0          | 0     |
| 88   | 0             | 0               | 0                   | 0          | 0     |
| 89   | 0             | 0               | 0                   | 0          | 0     |
| 90   | 0             | 0               | 0                   | 0          | 0     |
| 91   | 0             | 0               | 0                   | 0          | 0     |
| 92   | 0             | 0               | 0                   | 0          | 0     |
| 93   | 0             | 0               | 0                   | 0          | 0     |
| 94   | 0             | 0               | 0                   | 0          | 0     |
| 95   | 0             | 0               | 0                   | 0          | 0     |
| 96   | 0             | 0               | 0                   | 0          | 0     |
| 97   | 0             | 0               | 0                   | 0          | 0     |
| 98   | 0             | 0               | 0                   | 0          | 0     |

TABLE 10

YEAR 2020

| ZONE | EMPLOYMENT    |                 | TYPE                | INDUSTRIAL | OTHER |
|------|---------------|-----------------|---------------------|------------|-------|
|      | HWY<br>RETAIL | OTHER<br>RETAIL | OFFICE<br>INSTITUT. |            |       |
| 99   | 0             | 0               | 0                   | 0          | 0     |
| 100  | 0             | 0               | 0                   | 0          | 0     |
| 101  | 0             | 0               | 0                   | 0          | 0     |
| 102  | 0             | 0               | 0                   | 0          | 0     |
| 103  | 0             | 0               | 0                   | 0          | 0     |
| 104  | 0             | 0               | 0                   | 0          | 0     |
| 105  | 0             | 0               | 0                   | 0          | 0     |
| 106  | 0             | 0               | 0                   | 0          | 0     |
| 107  | 0             | 0               | 0                   | 0          | 0     |
| 108  | 0             | 0               | 0                   | 0          | 0     |
| 109  | 0             | 0               | 0                   | 0          | 0     |
| 110  | 0             | 0               | 0                   | 0          | 0     |
| 111  | 0             | 0               | 0                   | 0          | 0     |
| 112  | 0             | 0               | 0                   | 0          | 0     |
| 113  | 0             | 0               | 0                   | 0          | 0     |
| 114  | 0             | 0               | 0                   | 0          | 0     |
| 115  | 0             | 0               | 0                   | 0          | 0     |
| 116  | 0             | 0               | 0                   | 0          | 0     |
| 117  | 0             | 0               | 0                   | 0          | 0     |
| 118  | 0             | 0               | 0                   | 0          | 0     |
| 119  | 0             | 0               | 0                   | 0          | 0     |
| 120  | 0             | 0               | 0                   | 0          | 0     |

# APPENDIX C TABLE 11

## 1990 & 2020 EXTERNAL TRAVEL ANALYSIS

[Average Weekday Travel in vehicles per day]

| Station<br>Node<br>Number | Station Name   | 1990  |      |         | 2020  |       |         |
|---------------------------|----------------|-------|------|---------|-------|-------|---------|
|                           |                | Total | Thru | Ext-Int | Total | Thru  | Ext-Int |
| 101                       | SR 1001        | 929   | 106  | 823     | 986   | 111   | 875     |
| 102                       | NC 115         | 2585  | 814  | 1771    | 2745  | 863   | 1882    |
| 103                       | SR 2418        | 710   | 224  | 486     | 825   | 263   | 562     |
| 104                       | US 421 East    | 8100  | 2642 | 5458    | 18547 | 6063  | 12484   |
| 105                       | SR 2355        | 2785  | 421  | 2364    | 3332  | 505   | 2827    |
| 106                       | SR 2318        | 1275  | 442  | 833     | 1526  | 537   | 989     |
| 107                       | SR 2333        | 316   | 3    | 313     | 346   | 5     | 341     |
| 108                       | NC 268 East    | 10725 | 1974 | 8751    | 14456 | 2666  | 11790   |
| 109                       | SR 1002        | 2100  | 250  | 1850    | 2439  | 291   | 2148    |
| 110                       | NC 18 North    | 8100  | 697  | 7403    | 10918 | 952   | 9966    |
| 111                       | SR 1535        | 130   | 4    | 126     | 170   | 6     | 164     |
| 112                       | SR 1550        | 685   | 36   | 649     | 896   | 47    | 849     |
| 113                       | SR 1372        | 5900  | 632  | 5268    | 7719  | 827   | 6892    |
| 114                       | SR 1325        | 1730  | 259  | 1471    | 2264  | 338   | 1926    |
| 115                       | SR 1320        | 500   | 45   | 455     | 674   | 63    | 611     |
| 116                       | US 421 West    | 17000 | 4403 | 12597   | 38926 | 10048 | 28878   |
| 117                       | NC 268 West    | 4620  | 660  | 3960    | 6608  | 942   | 5666    |
| 118                       | SR 1194        | 3330  | 410  | 2920    | 4357  | 538   | 3819    |
| 119                       | NC 16/18 South | 6410  | 1588 | 4822    | 8900  | 2212  | 6688    |
| 120                       | SR 2467        | 1140  | 359  | 781     | 1492  | 465   | 1027    |

TABLE 11  
C-21



2412  
M. J.  
Woods

10

107

110

112

114

116

118

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124

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**APPENDIX C**  
**TABLE 12**

**TRAVEL CURVE DATA & FRICTION FACTORS**  
**WILKESBORO-NORTH WILKESBORO PLANNING AREA**

| TRIP LENGTH FREQUENCY CURVE |      |      |      |         |
|-----------------------------|------|------|------|---------|
| TIME<br>INTERVAL<br>(min.)  | HBW  | OHB  | NHB  | EXT-INT |
| 1                           | 0    | 0    | 0    | 1956    |
| 2                           | 220  | 171  | 1182 | 2298    |
| 3                           | 630  | 1342 | 2332 | 2631    |
| 4                           | 1415 | 3734 | 5608 | 4166    |
| 5                           | 2078 | 4784 | 5439 | 6123    |
| 6                           | 1603 | 3832 | 4865 | 8521    |
| 7                           | 1646 | 3124 | 4764 | 9191    |
| 8                           | 1603 | 3222 | 4527 | 9279    |
| 9                           | 1049 | 2440 | 2872 | 8836    |
| 10                          | 586  | 1147 | 1689 | 5681    |
| 11                          | 155  | 488  | 507  | 3156    |
| 12                          | 67   | 122  | 0    | 1263    |

| FRICTION FACTORS           |       |       |       |         |
|----------------------------|-------|-------|-------|---------|
| TIME<br>INTERVAL<br>(min.) | HBW   | OHB   | NHB   | EXT-INT |
| 1                          | 5240  | 1062  | 7113  | 82691   |
| 2                          | 10679 | 4950  | 11504 | 42629   |
| 3                          | 15878 | 12692 | 14911 | 26062   |
| 4                          | 18147 | 19818 | 16151 | 18279   |
| 5                          | 16796 | 20872 | 15244 | 14228   |
| 6                          | 13264 | 16419 | 13074 | 11890   |
| 7                          | 9415  | 10684 | 10623 | 10319   |
| 8                          | 6329  | 6370  | 8528  | 8997    |
| 9                          | 4244  | 3853  | 7052  | 7624    |
| 10                         | 2992  | 2619  | 6264  | 6075    |
| 11                         | 2336  | 2215  | 6232  | 4402    |
| 12                         | 2127  | 2582  | 7242  | 2807    |

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